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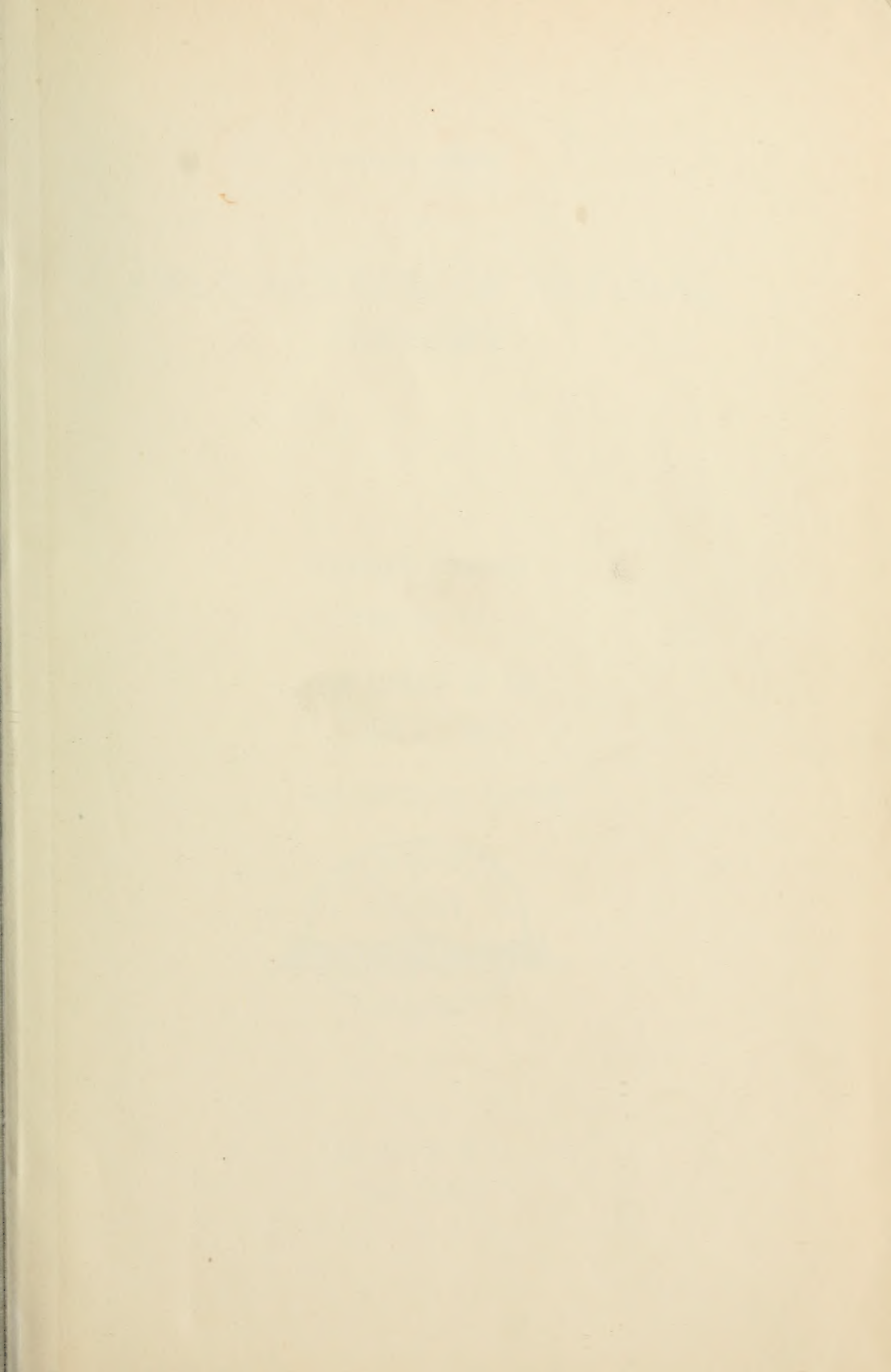
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THE LATE CHARLES F. MILLSPAUGH.
CURATOR OF THE DEPARTMENT OF BOTANY FROM NOVEMBER 1, 1893
TO SEPTEMBER 15, 1923, THE DATE OF HIS DEATH.

FIELD MUSEUM OF NATURAL HISTORY.

PUBLICATION 217.

REPORT SERIES.

VOL. VI, No. 3.

ANNUAL REPORT OF THE
DIRECTOR

TO THE

BOARD OF TRUSTEES

FOR THE YEAR 1923.



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Bequests to Field Museum of Natural History may be made in securities, money, books or collections. For those desirous of making bequests to the Museum, the following form is suggested:

FORM OF BEQUEST

I do hereby give and bequeath to "FIELD MUSEUM OF NATURAL HISTORY" of the City of Chicago, State of Illinois, _____

Cash Contributions made within the taxable year to Field Museum of Natural History to an amount not in excess of 15% of the tax payer's net income are allowable as deductions in computing net income under the Revenue Law.

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†Resigned, October 31, 1923.

*Deceased, September 15, 1923.

ANNUAL REPORT OF THE DIRECTOR

1923

To the Trustees of Field Museum of Natural History:

I have the honor to present a report of the operations of the Museum for the year ending December 31, 1923.

During the past year, the thirtieth anniversary of the foundation of the Institution, the activities of the Museum were effectively maintained in all directions. The accumulation of material of great value from new fields, obtained by expeditions dispatched to various parts of the world under the auspices of the Captain Marshall Field Fund, constituted the most important activity of the Museum for the year. The expeditions to China, to Brazil, to Chile, to British Honduras, the joint expedition of Oxford University and the Museum in Mesopotamia, the Riggs palaeontological expedition to Argentina, the archaeological expedition in Colombia, and the collections made by ordinary Museum expeditions, have brought to the stores of the Institution the most valuable material from every point of view that any year has recorded. The expedition to the Malayan Archipelago, conducted with funds contributed by Mr. Arthur B. Jones, returned during the year with a large quantity of excellent material.

These expeditions have been conducted without serious interference to the work of labeling, rearranging and recasing previously acquired material and the installation of new specimens. The introduction of new material in the exhibition series in all departments, with the consequent extension of the geographic areas covered, has compelled a considerable rearrangement of material to conform to space requirements and the transfer of many duplicates to the study collections. On account of the scientific discrimination and care with which this work was performed, the study collections have become more complete without detracting from the interest of the exhibited collections, at least from a popular standpoint.

Increased storage facilities for duplicate and for exchange material have been provided in all the scientific departments; and the spaces for the accommodation of study collections are being enlarged and the system improved.

Although the general subject of accessions is discussed in a subsequent part of the report, special reference should be made here of the acquisition by gift of the well-known Borden Collection received from Mrs. George W. Robb of Borden, Indiana. This important collection consists of more than twenty thousand specimens of invertebrate paleozoic fossils, accompanied by the working library of the collector.

Two important archaeological collections, consisting of 3,800 specimens, deposited by Mr. Martin A. Ryerson with the University of Chicago several years ago, were presented by Mr. Ryerson to the Museum.

The progress made by the N. W. Harris Public School Extension during the past years and the interest that the public and the Chicago schools have manifested in this foundation, has encouraged the family of the founder of this philanthropy to increase the endowment from \$250,000.00 to \$375,000.00.

Late in the month of November, Captain Marshall Field volunteered to increase his annual contribution to the Museum of \$50,000.00 to \$100,000.00 until further notice. Captain Field made no restrictions as to the use of this annuity, except the general suggestion that it should be used for the extension of the activities of the Institution.

President Field has contributed during the year the sum of \$63,630.00 to the deficit existing in the Building Fund. The total contributions from Mr. Field towards this end amount to \$263,000.00. A contribution towards this deficit was also received from Messrs. Graham, Anderson, Probst & White, architects of the new building, in the amount of \$6,000.00.

President Field has also continued his endowment of the work performed in the Stanley Field Plant Reproduction Laboratories. His contribution for the year 1923 being \$12,000.00.

The late Milward Adams, a Life Member of the Museum who had been interested in the Institution for a period of over twenty-five years, bequeathed to the Institution the sum of \$5,000.00.

Trustee James Simpson completed his payments towards the construction of the theatre which bears his name, at a total cost of approximately \$150,000.00. In addition to the actual cost of the theatre, Mr. Simpson assumed the expense of a canopy erected outside the entrance doors to the theatre, seven feet wide extending eighty feet to the drive, with a wide T opening along the sidewalk.

The monumental work "The Sylva of North America" in fourteen volumes by Charles Sprague Sargent, and a considerable number of

volumes of the Bulletin of Essex Institute, all constituting an important acquisition to the general library, were presented by Mr. John J. Glessner.

President Field has also presented a life size bust in bronze of a large African gorilla, entitled "The Old Man of Mikenno" by Carl E. Akeley.

A representative collection of pewter, numbering 326 specimens, was presented by Mr. Edward E. Ayer. This material is installed in Room 23 on the second floor and has attracted much attention from visitors and students.

As will be read elsewhere, Mr. Edward E. Ayer has continued his contributions of books to the Edward E. Ayer Ornithological Library and also to the Ichthyological Library. A catalogue is now in preparation of the first mentioned library.

Mr. Alfred M. Collins, a Patron of the Museum, invited the Institution to participate in an expedition to the Belgian Congo for the purpose of collecting natural history specimens in a region not previously subjected to careful investigation, with the result that Mr. Edmund Heller, Assistant Curator of Mammals, was assigned to accompany Mr. Collins to Africa. The party sailed from New York late in November, and expected to reach their destination the first of January. The plans of the expedition will keep it in that country for approximately six months.

The reports from Professor Stephen Langdon, in charge of the joint expedition in Mesopotamia, at least suggest the acquisition by the Museum of important archaeological examples.

In accordance with the arrangement made with the Geographic Society of Chicago some time ago, whereby the Museum agreed to allocate office area for the headquarters of the Society, it was determined to assign Hall 33 for this purpose. The premises thus assigned have been attractively furnished, occupancy commencing early in the month of September.

The physical additions to the building during the year included the construction of a Poisoning and Storage Room at the south end of the fourth floor, which provides excellent storage facilities for the Department of Anthropology. The restaurant on the ground floor was converted during the year into a cafeteria, where self-serving facilities are now available. The headquarters of the Guard force have been transferred from the south side to the northwest corner of the building, where more comfortable accommodation is provided.

As a means of controlling daylight in the exhibition areas, windows in Halls 22, 29 and 38 have been furnished with one hundred and eighty pairs of interlined Mohair curtains. These curtains are hung on brass poles and so arranged that the upper third or lower two-thirds can be drawn independently of each other. They are of a color to harmonize with the wall decoration.

The filling in of the terrace and the unfinished marble steps at the east end of the building were completed, as were the approaches and sidewalks of the terrace. The shipping room and boiler room roofs were waterproofed and overlaid with cement. These approaches and roofs required the laying of 3,721 square yards of white cement to match the entrances. The sidewalk along the outer balustrade of the terrace, connecting with the cement work to make a continuous walk around the building, required the laying of 2,400 feet of crushed limestone fifteen feet wide. Two ornamental grill openings have been fitted in the buttresses of the north entrance steps for fresh air intakes. The terrace steps have been repointed with cement and the entrance steps and buttresses have been caulked and pointed. The window sills have been carefully examined and more than one-third of them caulked and repointed.

A fuming hood with exhaust for celluloid work and three fresh air inlets have been installed in the taxidermy shop. The bird taxidermist shop on the third floor and rooms 88 and 90 have been equipped with water, gas, air, work benches, storage cases for specimens and storage cases for working material. Window benches have been built in rooms 81 and 88. On the third floor eleven rooms have been painted.

In order to provide suitable space for the departmental library in Botany, Room 2, formerly a skylight, has been floored over and the partitions separating rooms 1 and 2 removed and the three rooms thrown into one large room. Somewhat similar arrangements were made for the Departmental library in Geology, with the exception that the partitions were not removed. In the latter library 1,388 lineal feet of shelving have been placed.

The facilities in the Section of Printing have been increased by the addition of a 14 x 22 Universal Printing Press, equipped with a variable speed motor. This press is used chiefly for process color printing. It is adaptable for embossing work and for large labels or any printing too large for the two platen presses.

Progress has been made during the year in the classification of the 20,000 lantern slides. These slides were originally divided between the four departments under separate index systems, but have now been

brought together under one central system. Five lantern slides file cabinets were purchased, with a total capacity of approximately 50,000 slides. These cabinets were specially built for the storage of lantern slides, with grooved compartments along the interior of the drawers to secure a perfect division of the slides.

A gratifying and increasing appreciation of the lecture courses presented by the Museum is to be recorded, especially by children under sixteen years of age, for whom two courses were specially arranged. The programs for children consist chiefly of moving pictures and are given on Saturday mornings in March and April, October and November. At first it was believed that one showing of the picture would be sufficient, but the children attracted to these entertainments on one Saturday morning numbered over seven thousand, with the consequence that the lecture had to be repeated five times. The attendance subsequently dropped off slightly, due to the disappointment of many who could not even approach the doors of the theatre.

The campaign of publicity regarding the Museum and its activities resulted in a marked increase in attendance within a few weeks of its inauguration. The Museum is indebted to the cooperation of the transportation companies in placing the placards relating to the Museum in their cars and station platforms. The motor clubs also assisted in distributing folders containing information as to the correct motor roads leading to the Institution.

The By-Laws, published elsewhere in this report, explain the different characters of memberships and discloses the conditions under which they may be secured. Under the direction of the Secretary of the Corporation nominations for memberships were and are being made in large numbers and thus far 142 Associate Members, 88 Sustaining Members, and 253 Annual Members have been elected.

Besides securing to the Museum an effective constituency, these memberships provide a considerable annual revenue and it is believed that with proper efforts the number may be largely augmented from year to year.

In recognition of the eminent service he has rendered to science, Mr. Ernest R. Graham was elected an Honorary Member of the Museum.

In recognition of the eminent service they have rendered to the Museum, Mr. Peirce Anderson, Mr. Edward Probst, Mr. Howard J. White, Dr. George F. Kunz, and Mr. William V. Kelley were elected Patrons of the Institution.

The following were elected Life Members: Mr. Sewell L. Avery, John F. Jelke, Jr., Miss Shirley Farr, Mrs. Julia L. Whitney, Mr. Harold

H. Swift, Mr. William H. Finley, Miss Alice Robson, Mr. F. Edson White, Mr. W. R. Linn, Mr. Augustus A. Carpenter, Mr. Charles K. Knickerbocker, Mr. Chas. A. Stevens, Mr. George S. Payson, Mr. Albert Pick, Mr. Benjamin Carpenter, Mr. Charles H. Markham, Mr. C. M. Kittle, and Mr. Kieth Spalding.

An amendment to the By-Laws made during the early part of the year, concerned the method of disbursing the funds of the Institution; briefly, the voucher system heretofore in operation was partially abandoned, a combination voucher and check being substituted. This change has materially reduced the clerical work in this connection.

The Board of Trustees, after careful consideration, decided to abandon the suggestion to install in the new building the transportation collection at one time exhibited in the old building in Jackson Park.

The founder of the Stanley Field Museum Employees Pension Fund, with the approval of the Pension Committee, authorized a handsome increase in the capital value of the life policies of those individuals who have been in the continuous service of the Museum for a period of twenty-five years or more. This action when put in operation affected twenty-one individuals.

The Museum sustained a very serious loss during the year in the death of Dr. Charles F. Millspaugh, Curator of the Department of Botany since the inception of the Institution. The loss of Dr. Millspaugh to the Museum is expressed in the following resolutions adopted by the Board of Trustees:

The announcement of the death of Doctor Charles Frederick Millspaugh, in Chicago on September 15, 1923, is received by the Board of Trustees of Field Museum of Natural History with feelings of deep regret.

Beginning his career as a physician, Doctor Millspaugh early undertook the study of medicinal plants. While [thus engaged, botany gradually became his dominant interest and, in the end, his life work and profession, for which his practice of medicine was abandoned. He became in time one of the best known botanists of the day and his standing was unique, being equally notable in two distinct fields of his science, taxonomy and plant economics.

He enjoyed the distinction of having been the first appointee on the museum staff and as such was associated with this institution from its very inception. For the first time in the history of Museums Botanical Science was given full recognition and an adequate amount of space for its display. The opportunity thus granted was utilized by Doctor Millspaugh to the fullest extent.

The son of an artist, he wrought a knowledge of the principles and practice of art as well as of science into his work, and was thus able to impart rare attractiveness as well as scientific accuracy to his museum displays. It is conceded by those familiar with his museum installations that he initiated a new era for botanical exhibits.

No less remarkable than his genius for museum display was his ability as a curator from the administrative and scientific standpoint.

In a relatively short period of time he built up the Herbarium of Field Museum until it ranks as one of the largest in the world, and through a system of cataloguing which he devised and carried into effect, its contents are so well organized that it is available for reference to a degree perhaps unequalled.

In his personal relations as a member of the Museum Staff, Doctor Millspaugh was respected and admired by all. Especially noteworthy was his unflinching readiness to place at the service of his colleagues any or all of the treasures of wisdom with which his many years of wide experience had provided him.

He traveled extensively both before and during his connection with the museum, visiting many foreign countries in the interests of his department, and in the course of his travels worked for a time in most of the botanical gardens of the world.

Doctor Millspaugh was the author of a number of books, notably a West Virginia Flora, and the co-author of others, such as the recent Bahama Flora, in conjunction with his friend Doctor N. L. Britton. The last of his works, the Flora of Santa Catalina, gained universal approval as a model of its kind. His treatises on the plants of Yucatan, his botanical explorations in the Bahamas, and his work on the Spurges in particular, were accorded wide recognition. In botanical literature his name will always endure.

His death is felt as a distinct loss by the Board of Trustees, and he is mourned by the staff of the museum, as well as by many who knew him only by name or as National President of the Wild Flower Preservation Society.

The Board of Trustees desires to have this expression of their sorrow and appreciation of Doctor Millspaugh's work and career spread on the records of the institution and a duly attested copy sent to the members of his family.

GENERAL LECTURES.—On October 6th, the Museum resumed its series of free lecture courses discontinued since the Autumn of 1913. The lectures were held in the James Simpson Theatre on Saturday afternoons, at three o'clock. Because of the varied nature of these lectures they were well attended. Since adults showed much interest in the program of moving pictures arranged for children, three programs were added to the regular series. These were the Martin Johnson film, "Trailing African Wild Animals;" "A Trip Through Egypt;" and the film "Nanook of the North." The total attendance for the course was 8,293 persons.

The following is the program of the Fortieth Free Lecture Course, delivered during the months of October and November, 1923:

October 6—"Unique Siam."

Professor James H. Gore, Founder and Life Trustee
of National Geographic Society, Washington,
D. C.

October 13—"Australia's Wild Northwest."

Mr. M. P. Greenwood Adams, New York City.

- October 20—"The Music of the Red Man."
Dr. Henry Purport Eames, Chicago, Illinois.
- October 27—"Fishes and Fishing in South America."
Dean Carl H. Eigenmann, Indiana University,
Bloomington, Indiana.
- November 3—"The Natives of the Marquesas Islands."
Dr. Ralph H. Linton, Assistant Curator of North
American Ethnology, Field Museum of Natural
History.
- November 10—"Animal Life in the Jungles of South America."
Mr. Edmund Heller, Assistant Curator of Mam-
malogy, Field Museum of Natural History.
- November 17—"The National Park Service—What It Is Trying To
Do for the American People."
Hon. Stephen T. Mather, Director of the National
Parks, Department of the Interior, Washington,
D. C.
- November 24—"On Beaten Paths in Europe; A Travel Talk."
Professor J. Paul Goode, University of Chicago,
Chicago, Illinois.

ENTERTAINMENTS FOR CHILDREN.—Regular courses of lectures to school children have been given during the year in the James Simpson Theatre of the Museum. The main features of the entertainments were the moving pictures which added much to the interest of the children. There were two courses; the first series of ten entertainments being held in the spring and the second series of eight in the fall. Three of these fall programs were so enthusiastically received that they were repeated during the month of December. Many of the lectures were so popular, that the applications for seats were greatly in excess of the capacity of the Auditorium and it was necessary to extend the original lecture of one hour to a continuous program lasting from 9:00 o'clock in the morning until 1:00 o'clock in the afternoon. The total attendance for the two courses was 22,021 children.

The programs were as follows:

- March 24—Introduction.
Moving Pictures: "The Four Seasons" (Animal Life).
Museum Tour: Department of Zoology.
- March 31—"Chipmunks and Their Relatives."
*Moving Pictures: "Chipmunks and Other Animals."
"Br'er Rabbit and His Pals."
Museum Tour: Halls 15, 16 and 17.



FOSSIL CRINOIDS FROM THE BORDEN COLLECTION OF INDIANA.
GIFT OF MRS. GEORGE W. ROBB.
One ninth actual size.

- April 7—"Birds of Lake Michigan."
*Moving Pictures: "Water Birds."
Museum Tour: Halls 20 and 21.
- April 14—"The Folk Lore of Precious Gems."
Moving Pictures: "Magic Gems."
"Neptune's Neighbors."
Museum Tour: H. N. Higinbotham Hall.
- April 21—"How Birds Migrate."
*Moving Pictures: "Familiar Birds."
Museum Tour: Halls 20 and 21.
- April 28—"Primitive Fire Makers."
*Moving Pictures: "Fire Making Without Matches."
"Ants."
"Bees."
Museum Tour: Department of Anthropology.
- May 5—"Children in Japan."
Moving Pictures: "Nippon. The Boys' Festival."
"Going to School in Japan."
Museum Tour: F. W. Gunsaulus Hall.
- May 12—"Home Life of Common Birds."
*Moving Pictures: "Common Birds."
Museum Tour: Halls 20 and 21.
- May 19—"The Habits of the Moose and the White-tailed Deer."
*Moving Pictures: "Wild Moose and Deer."
"Man's Four-footed Helpers."
Museum Tour: G. M. Pullman Hall and Hall 16.
- May 26—"What Sharp Eyes Can See."
*Moving Pictures: "Wayside Natural History."
Museum Tour: General.

* N. B.—Grateful acknowledgement is made to Doctor Thomas W. Roberts, Director of the Zoological Museum of the University of Minnesota, for the loan of moving pictures marked with an asterisk.

- October 6—Moving Pictures: "Trailing African Wild Animals." (The Martin Johnson Film).
Museum Tour: African Game Animals.
- October 13—Moving Pictures:
* "Snowy Heron and Its Extermination."
* "Non-game Bird-life in Louisiana."
* "Game Bird-life."
* "Wild Geese."
Museum Tour: Birds.
- October 20—Colored Slides and Moving Pictures:
† "The Monarch Butterfly."
† "The Samia Cecropia Moth."
† "The Greenbottle Fly."
Museum Tour: Insects.
- October 27—Colored Slides and Moving Pictures:
† "Pond and Stream."
† "Toads."
Museum Tour: Fishes and Reptiles.
- November 3—Colored Slides and Moving Pictures:
† "Field and Wayside."
† "Bees."
† "Wasps."
Museum Tour: Insects.
- November 10—Colored Slides and Moving Pictures:
† "Mosquitoes."
† "The Black-and-yellow Spider."
"Baby Song-birds at Meal-time."
Museum Tour: Insects and Birds.

November 17—Moving Pictures:

“A Trip to Egypt.”

“Egypt—The Road to the Pyramids.”

“Calling on the Sphinx.”

Museum Tour: Egyptian Archaeology.

November 24—Moving Pictures: “Nanook of the North.”

Museum Tour: Eskimo Collection.

N. B.—Grateful acknowledgment is made to Mr. E. A. McIlhenny of Avery Island, Louisiana, for the gift of moving pictures marked with an (*) and to the Society for Visual Education, Chicago, for the loan of moving pictures marked with a (†).

PUBLICATIONS

The following books have been published during the year:

Pub. 212—Botanical series, Vol. V, No. 1. The Flora of Santa Catalina Island. By Charles F. Millspaugh and L. W. Nuttall, January, 1923. 413 pages, 1 color plate, 25 halftones, 1 map. Edition 1,031.

Pub. 213—Report Series, Vol. VI, No. 2. Annual Report of the Director for the year 1923. 81 pages, 13 halftones, Edition 2,028.

Pub. 214—Zoological Series Vol. X, No. 16. Contents and Index to Volume X (Nos. 1-15) 22 pages. December, 1923. Edition 1,000.

Pub. 215—Zoological Series, Vol. XV. Marine Fishes of Panama. Part 1. By S. E. Meek and S. F. Hildebrand. December, 1923. 342 pages. 24 halftones. Edition 1,500.

A list of handbooks and leaflets published is given below:—

Manual—53 pages, edition 4,953.

General Guide—24 pages, edition 15,055.

Guide to Oriental Theatricals, Part 1. By B. Laufer. Edition, 4,997. 11 halftones. 59 pages.

Leaflets—Anthropology, No. 7. Purification of the Sacred Bundles. By Ralph Linton. One photogravure. 11 pages. Edition 3,103.

Anthropology, No. 8. Annual Ceremony of the Pawnee Medicine Men. By Ralph Linton. 2 photogravures. 20 pages. Edition 3,064.

Anthropology, No. 9. The Use of Sago in New Guinea. By Albert B. Lewis. 4 photogravures. 3 figures. 9 pages. Edition 3,054.

Anthropology, No. 10. Use of Human Skulls and Bones in Tibet. By B. Laufer. One halftone. 16 pages. Edition 2,970.

Anthropology, No. 11. The Japanese New Year's Festival, Games and Pastimes. By Helen C. Gunsaulus. 8 halftones. 18 pages.

Geology, No. 3. Amber. By Oliver C. Farrington. 3 colored photogravures. 1 photogravure (monotone) 7 pages. Edition 3,051.

Geology, No. 4. Meteorites. By Oliver C. Farrington. 4 photogravures. 11 pages. Edition 3,044.

Zoology, No. 4. The Periodical Cicada. By William J. Gerhard. 4 photogravures. 14 pages. Edition 3,128.

Zoology, No. 5. The Alligator Gar. By Alfred C. Weed. 3 photogravures. 16 pages.

LIBRARY

The location of the Library, on the third floor, to which it was transferred early last year has proved of great benefit to the staff of the Museum. The resources of the library have been constantly taxed, especially by the returning members of the expeditionary forces who need authoritative works to identify, classify and label the material collected. The accessions of the year were 2,375 books and pamphlets and 81 maps, bringing the total number of books and pamphlets in the library to 82,033.

As in former years the library is again indebted to the generosity of Mr. Edward E. Ayer for valuable additions to the Ornithological Library bearing his name. This donation includes one hundred and fifty one works in seven hundred and twenty volumes, exceeding in number any of his previous gifts. Included in this collection were books long out of print or unusual in character. A special bookplate designed by the Museum's artist has been made to mark the books presented by Mr. Ayer. Mr. John J. Glessner presented the monumental work by Charles Sprague Sargent, *The Silva of North America*, in fourteen volumes, illustrated by over seven hundred plates. Noteworthy accessions were also received from M. Henri Gadeau de Kerville, Paris—a *Zoological Voyage through Syria*; Mr. Ramirez Goyena, Nicaragua, the *Flora of Nicaragua*; Mr. E. A. Strehlneck, Shanghai, *Chinese Pictorial Art*; Mr. William J. Chalmers, works on China; Mr. J. A. Hammerton, London, *Peoples of all Nations* and Hon. John Barton Payne, Gamio, *La Poblacion del Valle de Teotihuacan*, three volumes.

The fund available for the purchase of books was expended on works necessary to meet the requirements of the staff. Over two hundred and eighty-five books were purchased and orders for one hundred and twenty-nine volumes are still outstanding. Five hundred and seventy-nine volumes of books were bound and eleven thousand, four hundred and seventy-nine cards were alphabetically filed, together with the monthly installments of author cards from the John Crerar Library.

Among a number of important sets of periodicals purchased are the following:

Annals of the Association of American Geographers, eleven volumes.

Avicultural Magazine, fifteen volumes.

Buffon, *Histoire naturelle*, one hundred and twenty-seven volumes. 1798-1808.

Chinese repository, twenty volumes, 1832-1857.

Dictionnaire des Sciences Naturelles, thirty-six volumes.

Engler and Pruden's *Vegetation der Erde*, fourteen volumes.

Gypsy Lore Society Journal, nine volumes.

Journal of the Bombay Natural History Society, twenty-three volumes.

K. K. Zoologisch-Botanische Gesellschaft, *Verhandlungen*, fifty-three volumes.

Ornithologisches Jahrbuch, twenty-nine volumes.

The principal asset in the growth of the library is the system of exchange, by means of which the publications of other scientific institutions are received in exchange for those issued by the museum. Exchanges were received this year from six hundred and seventy individuals and contemporary institutions. Five new exchanges were effected with the following societies: Société des Sciences Naturelles de l'Afrique du Nord, Société Botanique de Pologne, Warsaw, Société Scientifique de Poznan, Société des Sciences Naturelles du Maroc and Société de Géographie d'Alger.

DEPARTMENTAL CATALOGUING, INVENTORYING AND LABELING

ANTHROPOLOGY.—The work of cataloguing in the Department of Anthropology has been continued as usual during the current year, the number of catalogue cards prepared totaling 2,429. These cards are distributed geographically as follows: South American and Mexican archeology 1553; North American ethnology 88; Australia and Africa 31;



PREHISTORIC GOLD ORNAMENTS EXCAVATED FROM GRAVES,
SANTA MARTA, COLOMBIA.

CAPT. MARSHALL FIELD EXPEDITION TO COLOMBIA, 1923.

Three fifths actual size. Width of central figure $6\frac{3}{4}$ inches.

China, Korea and Japan 552; Chinese pewter 20; European pewter 185. Of these cards 376 have been entered in the inventory books of the department, which number 39. The number of annual accessions amounts to 59, of which 26 have been catalogued. Two accessions of previous years were also tabulated. The total number of catalogue cards entered from the opening of the first volume is 157,938. Several thousand labels were prepared and installed during the year, the number of labels supplied by the printer totaling 5,036. These labels are distributed as follows: Plains Indians 2,261; Plateau Indians and Salish tribes 803; Mexico, Paraguay and Brazil 410; Ayer Pewter collection 570; Melanesia 96; Stanley Field Hall 48; Gem Room 3; Egypt 76; sculpture of India 120; Japan 638; miscellaneous 11. The printer further supplied the Department with 6,175 catalogue cards and 500 copies of a sketch map of the United States, to be used for exhibition purposes in the cases of Halls 4 and 5. Two hundred and twenty label cards were prepared and added to the label-file. The labels in this file serve as a cross check to the labels in the exhibition cases, so that any label desired may be found without delay. Three hundred and fifty-four photographs were added to the departmental albums, and a new album was begun.

BOTANY.—Over 16,800 new entries were made during the year in the Department Catalogue, bringing the total number of catalogued specimens in the Department up to 529,991. Additions were made to the various Department card files as follows:

	No. of Cards 1923	Total
Index to Botanical Species.....	4,761	170,849
Index to Common Names.....	607	24,106
Index to Collectors.....	164	10,584
Index to Geographical Localities.....	47	2,907
Index to Euphorbiaceae.....	852	

A card catalogue index was begun of the 'economic' material in the Department, i. e., all of the exhibition and reference material other than the herbarium specimens. A total of 8,400 cards were written and indexed.

GEOLOGY.—All accessions received in the Department of Geology have been carefully catalogued as received with the exception of the collections obtained by the Alberta expedition and part of those acquired by the Curator in Brazil. The cataloguing of these is not yet completed. The Borden collection is being catalogued as fast as it can be organized, but it will be several years before the work on this material is completed. A total of 6,245 new entries has been made during the year. Of these,

5,246 represent additions to the Borden collection; 540 to the mineral and 147 to the economic collections. A total of 577 new labels were written during the year. A new process of printing, developed in the section of printing, has made possible the installation of mahogany guide labels over the cases in the halls of mineralogy, paleontology and dynamic and geographic geology. These labels are printed in gold ink on a veneer of mahogany board and thus harmonize completely with the framing of the cases. This system of case labeling, which is a distinct improvement over the old style labels, was originated several years ago and is now nearing completion. A total of 231 prints have been added to the Department photograph albums, which now contain 4,052 labeled prints.

Special labor was involved in the preparation of a series of large, oval, descriptive labels which have been placed at the ends of ten pyramidal cases in paleontology. They were printed with gold ink on mahogany veneer board. As it was found that a glass cover would interfere with their legibility, the mahogany board upon which they were printed was specially prepared to ensure durability of the printing. The effect of the labels as prepared and mounted in this manner is very pleasing and it is believed that they will be found to be durable.

For the systematic mineral collection a series of large labels giving a description of important mineral groups, such as the micas, feldspars and garnets has been prepared and installed.

ZOOLOGY.—The cataloguing of the accessions in the Department of Zoology has been continued. The total number of entries made was 3,451, distributed as follows: Mammals, 132; Birds, 140; Fishes, 448; Insects, 425; Skeletons, 43; Reptiles and Amphibians, 2,262. The entries made in the last division represent the accumulated uncatalogued material, which has now been reduced to a minimum. The index of salamanders has been maintained and shows an increase of 22 entries and an addition of five species new to the Museum's collections. In the Division of Fishes 500 additional entries have been made in old record books under numbers "assigned" but not previously used. In the improved index of fish specimens under the new catalogue system, 103 new sheets have been made and new entries on these and other sheets total 337. All specimens have been thoroughly labeled. In the Division of Insects, the cataloguing has been confined mostly to the series of North American butterflies which were selected for future exhibition. New labels for 994 shells have been provided to replace the old style of labeling. In the Division of Osteology 12 new labels were



GREAT GRAY OWL.
TAXIDERM BY ASHLEY HINE.
One third natural size.

prepared, framed and placed on metal supports in front of the large skeletons which are installed on open stands. A total of 2,016 lantern slides has been classified and labeled under the following headings: Zoology 782, maps and diagrams 108, physiography and scenery 1,136.

The following table shows the work performed on catalogues and inventories in the various Departments.

	Number of Record Books	Total No. of entries to Dec. 31, 1923	Entries during 1923	Total No. of cards written
Department of Anthropology.....	39	159,991	2,429	159,991
Department of Botany.....	63	529,248	16,822	8,400
Department of Geology.....	22	153,916	6,245	6,822
Department of Zoology.....	40	108,671	3,451	34,909
The Library.....	14	142,393	11,499	317,917

ACCESSIONS

ANTHROPOLOGY.—The new accessions received during the past year by the Department of Anthropology have been extraordinarily large, due to the successful field expeditions. These accessions were received from almost all parts of the world and exceed in number and value the accessions obtained during the past twelve years. The total number of accessions registered amounts to 59; of these, 45 are by gift, 4 by exchange, 6 by purchase, and 4 as the result of Museum expeditions.

Several more shipments were received from the Captain Marshall Field Expedition to Colombia, containing large numbers of fine small objects, such as gold, beads, shell, stone and pottery, as well as ethnological objects from the Goajiro and Arhuaco Indians, consisting of knitted bags and hammocks, bows and arrows, pots, gourds, and many others illustrative of their culture and mode of life. The collections obtained by the Arthur B. Jones Expedition to Malaysia are particularly noted for the textiles and metal work, comprehensively representing the life of the Sakai, Semang, Yakun and Malay of the Federated Malay States, the Tobak Batak and Menangkabau of Sumatra, as well as the natives of Nias, Java and Borneo. The collections secured by the Captain Marshall Field Expedition to China conducted by the curator have been characterized under the heading "Expeditions."

The most valuable accessions to the North American Indian collections consist of a complete Menominee Indian woman's costume, purchased through the assistance of Mr. Alanson Skinner of the Public Museum of Milwaukee. Two Fox medicine bundles, three Fox medicine otters, three Iroquois pipes, and two Central Algonquian robes with silk appliqué were received through exchange with the Public Museum of Milwaukee. The examples of Indian appliqué work are especially

valuable, as this form of decoration was highly developed among the Indians living in the neighborhood of Chicago during the early nineteenth century and was not previously represented in the Museum collections. A small, but excellent collection of objects from the Alaskan Eskimo was presented by Mr. W. H. Roberts of Chicago. Mrs. C. M. Andersen of Chicago presented an Eskimo woman's suit consisting of an eider-down lined jacket, sealskin trousers and inner and outer sealskin boots, brought from Good Hope, Greenland. Mr. Edward E. Ayer presented a woman's dance skirt of buckskin decorated with shells and pendant beads of glass, shell, and abalone, from one of the tribes of northwestern California. A head-band of stuffed buckskin and a closely woven head-dress worn in the White Deerskin Dance are the gifts of Mr. Homer E. Sargent and were accompanied by a unique Navaho blanket in red, black, yellow and green colors made from native dyes. The history of the blanket, as far as obtainable, is that it was secured in the Navaho country about 1850 and remained in the possession of the same family until quite recently. The Museum, further, received from Mr. Sargent the fifth installment of his collection of baskets consisting of 27 specimens from Alaska, California, and Abyssinia. These, with his previous gifts of the same character, make a total of 665 baskets he has presented to the Museum. Mr. Watson F. Blair and Mr. Chauncey Kcep, trustees, presented two very large chipped obsidian blades from the Yurok tribe of Humboldt County, California, similar to those which were carried in the hands of the two leaders of the White Deerskin Dance, performed only in that region. A Salish blanket purchased by the Museum presents an unusual texture and technique, being decorated with a group of herringbone patterns.

Seven accessions relate to Latin America, two from Mexico being considered the most important. The large Mexican collection formerly deposited in the University of Chicago was presented to the Museum by Mr. Martin A. Ryerson. This collection consists of about 3,000 pieces, among them being some exceptionally fine specimens of pottery, stone carving, and work in obsidian, shell and copper. The Aztec, Toltec, Zapotec, Huastec and Tarascan cultures are well represented, and the collection is eminently desirable to round out and improve the present Mexican exhibit. It also contains 400 objects relating to the archeology of the Southwest and 70 objects from Peru. Mr. Franklin Hollister presented an excellent small Mexican statue of lava with inset bone teeth of typical, but unusually fine technique. Two small collections were secured by the Museum's zoological expeditions to South America. One of these, a collection excavated and presented to the

Museum by Mr. F. C. McNutt, is especially noteworthy for carved wooden objects and basketry. The arid climate of the Atacama desert, in the north central portion of Chile, has served to preserve these antiquities, which have been recovered in excellent condition. Unusual pieces of bronze, stone, textiles and pottery are also contained in the collection, which demonstrates affinities with both Peruvian and Calchaquian cultures. Among twelve copper pieces is included an extraordinary axe of Diaguite type, skillfully hafted. There are some remarkable wooden bells of oval shape with two holes for suspension, similar to the copper bells of Diaguite origin.

The Egyptian collections were increased by the wrappings of a mummy and 18 Ushebti figures, presented by Mr. Edward E. Ayer. These, with the series donated on previous occasions, make a total of 95 Ushebti figures. A lion-maned head-dress with two strips of white monkey-skin attached, from the Masai in British East Africa, was presented by Mr. A. Healy of Chicago. As this tribe is no longer permitted to engage in warfare, such head-gears have become quite scarce. Bows and arrows from the Congo region were given by Mr. W. J. Chalmers. Arm rings of ivory and brass wire, daggers, and foot-wear from Upper Nigeria were purchased by the Museum. Three good examples of boomerangs from tribes of Central Australia, two being painted with native red ochre, and one of a rather unusual type, were presented by Mr. F. R. Babcock. While engaged on his expedition to China, the curator received many gifts to the museum, aggregating 206 objects. Fine jade carvings of the Han period, jade boulders and ancient iron implements presented by Mr. P. J. Bahr of Shanghai, and an imperial jade emblem of the Sung period presented with four bits of Sung, Yüan, and Ming pottery by Mr. T. R. Abbott of Peking, are deserving of particular mention for their artistic value.

At the beginning of the year, Mr. Edward E. Ayer presented an extensive collection of pewter objects comprising plates, tankards, jugs, mugs, tureens, guild-cups, teapots, lamps and candlesticks, which originated in China, England, the United States, Germany and Austria. This collection was immediately placed on exhibition in Hall 23 in 9 cases. Since then, Mr. Ayer has completed his collection of ancient pewter by means of numerous additions. In the course of the year 139 pewter objects of European, Chinese and Japanese origin were received from Mr. Ayer in order to strengthen the collection now on exhibition. With these novel additions, the pewter collection is made thoroughly comprehensive, embracing all countries and periods, and containing all articles ever made in this alloy.

Dr. Ludwig Hektoen presented a very fine old blade from a Japanese fighting sword. This sword is presumably of sixteenth century workmanship, and is encased in a scabbard of unstained wood which is protected by a brocade cover. A series of ten Japanese paintings illustrating the transience of human life are the gift of Mr. Frederick Gookin of Chicago. Three miniature Japanese masks of carved, painted wood, representing a peasant and two young noblemen, were received from Mr. Norman Beck of Chicago, and Mr. Charles Alling of Chicago added an interesting surimono by Kunisada to the collection of Japanese prints.

BOTANY.—The most important accessions to the Department of Botany were received from the Captain Marshall Field Expeditions. 11,000 specimens, or 4,250 numbers were secured, of which 3,500 are flowering and 750 are non-flowering plants. Other collections of importance received during the year were the André Bolivian Collection of 1,000 plants secured from the Kew Gardens; the Robert H. and Richard Schomburgk British Guiana collection of 315 specimens; the H. A. Gleason collection of 1,200 Guiana plants and the LaVarre-Lang collections of 200 numbers; a collection made by A. C. Persaud of 1,309 specimens or 445 numbers also from British Guiana; 496 Brazilian plants collected by Blanchet and Claussen; a miscellaneous collection of 502 plants from the United States National Herbarium; another of 555 specimens mostly from Pennsylvania, collected by R. R. Driesbach; a collection of 218 Wisconsin plants deposited by John R. Heddle.

GEOLOGY.—Mrs. George W. Robb of Borden, Indiana, presented the Department of Geology with the most important addition to the original geological collections ever received by gift. This valuable collection forms an unusually complete series, estimated to contain about 30,000 specimens of Devonian, Mississippian and Pennsylvanian fossils, from the well-known collecting grounds of southern Indiana and Kentucky. It contains also numerous specimens from other regions and periods.

This collection is the result of many years' work by the prominent geologist, Prof. William W. Borden. To the result of his own labors Professor Borden added at a cost of thousands of dollars the best specimens he could secure from other collectors. He purchased the entire Harrod collection and others of lesser note and secured the most valuable material from such well known collections as the Greene. Although a substantial Museum building had been erected in Borden to house the collection, Mrs. Robb felt that its importance justified placing it in a larger institution where its intrinsic value could be appreciated by greater numbers.



CEREMONIAL OBSIDIAN BLADES OF YUROK, CALIFORNIA.

PRESENTED BY CHAUNCEY KEEP AND WATSON F. BLAIR.

Length $20\frac{3}{4}$ and $16\frac{3}{8}$ inches, respectively.

The collection is especially noteworthy for the beauty and perfection of its crinoids and for the extreme care with which the specimens have been assembled. This acquisition has made it necessary to prepare for an extensive reorganization of the exhibits of invertebrate paleontology.

Dr. William Bebb presented twelve specimens of fossil bird skulls from the La Brea asphalt beds. The Stanford University through the courtesy of Dr. David Starr Jordan, presented a slab containing fossils of the herring-like fish, *Xyne*. Twenty-three fossil shells from the Chilean Andes have been received from the Captain Marshall Field Chilean Expedition. Teeth from two of the great fossil sharks, collected in equatorial Africa, were presented by Mr. Anthony J. Wysche. A large collection of fossil shells from the San Pedro beds, California, was contributed by Mr. E. E. Halvorsen of Santa Barbara. Mrs. W. L. Crawford added to her former gifts an excellent plastron of a fossil turtle from Texas. Four fossil fish were gifts from Mrs. Walter C. Ellis. The head of a trilobite found by Mr. Quincy L. Dowd in Lombard, Illinois, and presented to the Museum, represents a larger species than is commonly found in this local area.

The meteorite collection has been enlarged by the gift of a specimen of the Waraldi meteorite, presented by Mr. George W. Card of Australia. Professor Liversidge of Surrey, England, presented casts of the Bingera meteorite and Mr. Ralph Buckstaff gave a specimen of the Pitts meteorite.

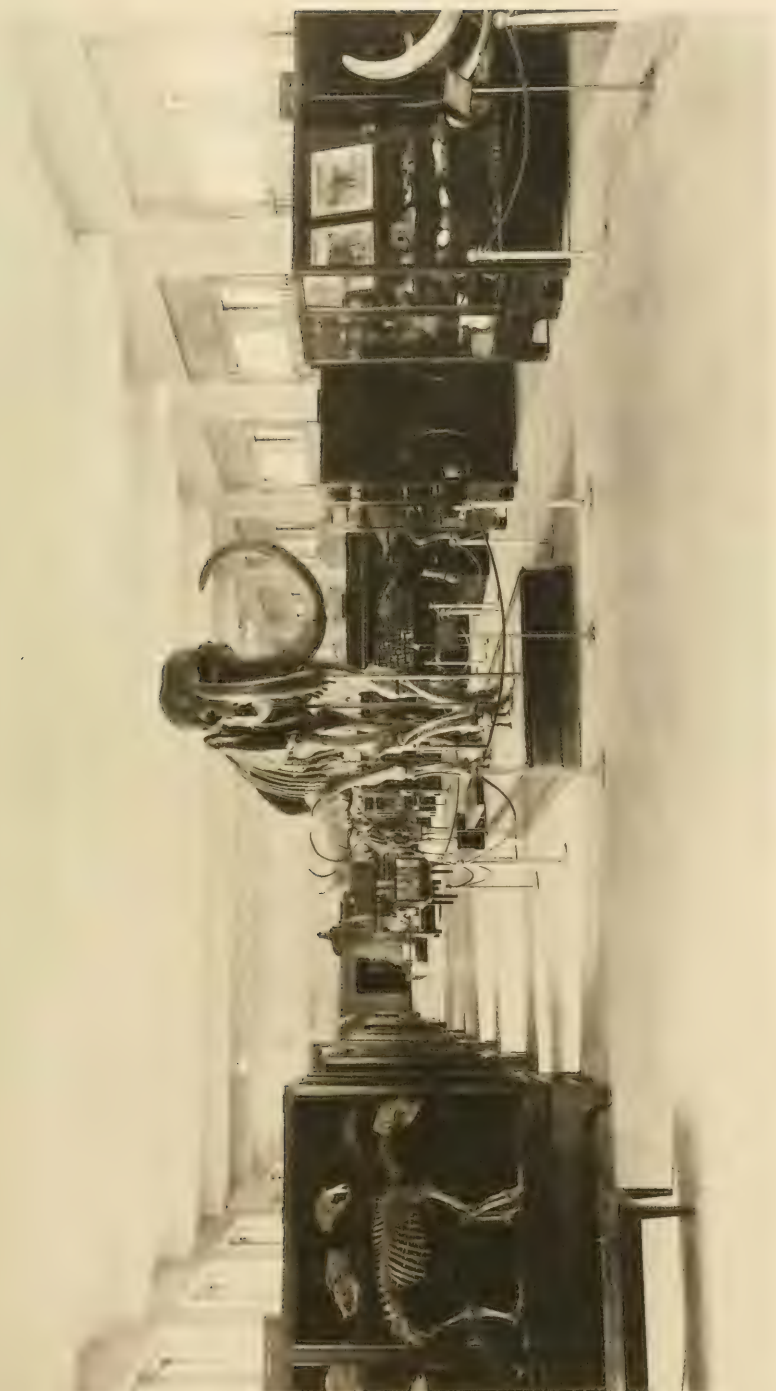
Mr. William J. Chalmers added 49 specimens of gems and choice crystals to the crystal collection bearing his name and also presented a number of Californian nuggets which are now in Higinbotham Hall. Mr. Wayne E. Douglas secured in southern Illinois some unusually attractive fluorites and presented them to the Museum. A group of minerals from well known collecting grounds in New England, was added to the collections by Mr. W. J. Elwell. In addition to his former gifts, Mr. F. J. Lean presented a large specimen of datolite and a number of native coppers of unusual forms. Mrs. Scott Jordan, Miss Fannye M. Neumann, Mrs. M. R. Rood and Mrs. D. N. Eisendrath have each presented collections which contain a variety of minerals. The Standard Oil Company (Indiana) has enlarged the petroleum exhibit by the addition of 86 candles. Mr. W. C. Flower filled a gap in the collection of gold and silver ores by the presentation of nine specimens from Oregon and Idaho, and a collection of ores and minerals from South Dakota was received from the Department of Immigration of that State. Through the good offices of Mr. William J. Chalmers, the Asbestos Corporation of Canada, Ltd., presented six fine specimens of Canadian asbestos.

Specimens of minerals, ores and rocks, numbering 323, collected by the Captain Marshall Field Brazilian expedition of last year, reached the Museum during the year. A single topaz crystal of 90 pounds weight which is believed to be the largest topaz of gem quality in existence, was acquired by the Curator on his recent expedition to Brazil.

The Museum acquired by exchange a series of 130 fossil shells collected in Mississippi and five minerals of exceptional quality from Nevada. Five individuals of the Ness Co., Kansas, meteorite were acquired by purchase. Other purchases were a specimen of troilite of terrestrial origin and a skull of the fossil *Hipparion* from Greece.

ZOOLOGY.—A total of 26,298 specimens was added to the collections in the Department of Zoology. This includes the largest number of vertebrates received in one year in the history of the Department. The specimens are divided as follows: Mammals, 2,882; birds, 5,181; eggs and nests, 26; reptiles and amphibians, 3,848; fishes, 12,995; insects, 1,336. The majority of these were received from the Captain Marshall Field Expeditions to Peru, Chile, Honduras, and Texas, all of the expeditions being unusually productive. This is especially true in the Division of Mammals where but few purchases were made, and the gifts, although valuable, were not numerous. Of the 2,882 mammals accessioned, 2,857 were received from Museum expeditions. These were mostly from Peru, Chile, Argentina and Brazil. Two skulls of wild-killed Elephants were contributed by the Arthur B. Jones Malay Archipelago Expedition. The principal gift was that of two well prepared specimens of the Fringe-eared Oryx from East Africa, collected and presented by Mr. F. S. Colburn and Mr. A. M. Lindsay.

The accessions of birds amount to a total of 5,181 specimens, of which 2,519 were purchased, 2,498 were received from Museum expeditions, and 384 were obtained by exchange. These birds are from a wide geographic range, coming as they do from Peru, Chile, Argentina, Brazil, Ecuador, Uruguay, Colombia, British Honduras, Dominican Republic, Austria, Germany, Norway, Canary Islands, Azores, New Guinea, and the United States. An important accession by purchase was the Fischer collection of German and Bavarian birds, consisting of 1,823 specimens especially well prepared and in adequate series. These formed a welcome addition to the Museum's collections, in which Old World birds had been inadequately represented. Other purchases included 202 birds from Ecuador, 129 from Argentina, and 263 from various parts of South America which, combined with the expedition material, added many



HALL 38. PALEONTOLOGY.

species of considerable rarity and many others not at present represented in the collections. Most noteworthy among the single specimens is a fine example of the Blue Bird of Paradise from New Guinea, one of the rarest and most beautiful of its family.

In the Division of Reptiles and Amphibians, the accessions for the year reach a total of 3,848 specimens, by far the most important in the history of the Museum and actually increasing the total number previously possessed by nearly one-half. Of these, 403 specimens were received by gift, 510 by purchase, and 2,935 from Museum expeditions. Important gifts are 103 specimens from St. John's college, Belize, British Honduras; 173 specimens from Wisconsin, from assistant curator Karl P. Schmidt, and his brother, F. J. W. Schmidt; 38 from Texas from Col. M. L. Crimmins; 42 from Rothschild's Chicago Aquarium, through the courtesy of Mr. John Bichele; and 7 specimens from northern Peru from Mr. Axel Olssen of Gloversville, New York. Important purchases are 300 exotic species from W. F. H. Rosenberg; 4 specimens of the peculiar African Soft-shelled Tortoise received from Mr. Arthur Loveridge; and 174 specimens collected in South Carolina by Mr. Edward A. Hyer. The Captain Marshall Field Expedition to Honduras obtained 1,275 reptiles and amphibians; the expedition to Chile and Argentina 687; the expedition to Peru 97; and the expedition to Louisiana and Texas 758.

Accessions of fishes were numerous and important, amounting to a total of 12,995 specimens, of which 10,342 were received from expeditions, 2,294 were gifts, 330 were purchased, and 29 were received in exchange. The largest single accessions were of 8,000 fishes from southern Texas and 2,000 from southeastern Louisiana, collected by the Captain Marshall Field expedition to those states. Some of these may prove to be new to science and many will serve to clear up disputed points in the classification of North American fishes. Other expeditions to South and Central America, although not primarily seeking fishes, secured considerable material from this territory, including new and undescribed species. A collection of fishes from Marion County, Florida, was purchased and, since the locality is not one previously represented in the Museum's collections, the specimens will have considerable value. A very fine Red Snapper and a beautiful Lake Trout, for exhibition, were purchased from Mr. W. M. Walker. These two were practically gifts, since the specimens were ordered and selected especially for the purpose, and the charge made was nominal. Gifts of fishes include the following: 700 specimens from Louisiana and the Gulf of Mexico from the Southern Biological Supply Company, through its president, Mr. Percy Viosca, Jr.; a large specimen of the Pacific Wolf Eel from the Booth Fisheries

Company; a hybrid pickerel from Mr. George McNeill; and various specimens, mainly sunfishes, from Lincoln Park Aquarium, through the courtesy of Mr. F. S. Young. The management of Rothschild's Aquarium has continued the practice of giving the Museum the more interesting of their fishes that die in the tanks. Nearly 140 specimens were received from this source. The New York State Conservation Commission and the Wisconsin Conservation Commission have assisted in obtaining material for a special exhibit of pikes, pickerels and muskalonge.

Two very interesting fishes were received in exchange. These were the Australian Lungfish, of which three specimens and a number of eggs were received from the Queensland Museum, Brisbane, Australia; and the Deep Sea Flounder (*Pelecanichthys crumenalis*) from the U. S. National Museum. Very few specimens of this flounder ever have been taken. It differs from all other known flounders in having a very long lower jaw, which carries a pouch suggesting that of a pelican.

The insects accessioned consisted of 25 lots and include 1,366 specimens. The largest and most noteworthy acquisition was the purchase of an authoritatively classified collection of 600 dragonflies, representing 122 species from Brazil, a country from which the Museum had previously obtained but few specimens. Another desirable purchase consisted of 100 butterflies and 10 moths from southwestern India. Among the donations, the most valuable were 99 dragonflies from Central and South America, a gift from Mr. Jesse H. Williamson, Bluffton, Indiana; 134 butterflies and moths collected in Colorado and presented by Dr. C. E. Hellmayr; and 178 insects of various orders from British Guiana, a gift from Dr. B. E. Dahlgren. On the Captain Marshall Field expeditions, 198 desirable scorpions, centipedes, spiders and insects were obtained from the southern United States, Central America, and South America.

Accessions of skeletons include one hippopotamus and 30 other mammals, mostly South American, and one iguana and 2 crocodiles.

EXPEDITIONS

During the past year the Museum has carried on more active and successful expeditions than in any previous year of its existence. The wide geographical range of the exploration parties has meant a corresponding increase in the number and importance of the additions to the collections. Of the twelve major expeditions in the field, seven operated in South America. The other expeditions carried on their research in China, the Malay Peninsula, Central America and the Gulf

Region of the United States. Important results are being obtained from the joint expedition of Field Museum and Oxford University, England, which is operating at Kish in Mesopotamia. Recent excavations have shown that the workers have actually discovered the seat of the oldest empire known to history.

The personnel of nine of the expeditions have returned to take charge of the classification of the material obtained in the field. Three of the exploration parties are still at work in the field, and another was dispatched to Central Africa late in November.

ANTHROPOLOGY.—The Department of Anthropology had four expeditions in the field during the year, covering China, Mesopotamia, Malaysia and Colombia.

The curator of the department, Dr. Berthold Laufer, left in April for China, the expedition being under the auspices of Captain Marshall Field. Dr. Laufer had exceptional opportunities for studying private collections of prominent Chinese at Shanghai and Peking, and specialized in the study of Chinese civilization during the Sung period, that great age of Chinese renaissance in which the traditions of antiquity were revived and the foundation was laid for a truly national art. Great efforts were made to secure representative collections of Sung pottery and painting. Of the former, 170 specimens from kilns of both southern and northern China were obtained, including all types and glazes, among these 6 Chün yao, 25 Ting yao, 44 Temmoku, and 13 Celadons, many being of great beauty and rarity. Three bits, a Kuan yao, a Ju yao, and a Ko yao, belong to the earliest products of Sung porcelain and are extremely rare. A large portion of this pottery was excavated in recent years on the site of the city Kū-lu in the southern part of the province of Chili, which was submerged by a flood in A.D. 1108. All this pottery must have been made prior to that date and therefore can be safely placed as to period. Aside from its artistic value it will serve to illustrate many interesting features of Chinese daily life in a mediæval community. From the same locality were obtained four carved wooden panels and a number of engraved wooden stamps or blocks for printing designs on textiles, which belong to the oldest printing-blocks in the history of this industry. Twenty-three paintings, half of this number from the Sung period, were obtained, all of superior quality and interest in subject matter. Five remarkable silk-woven tapestries, one of the Ming dynasty and four of the K'ien-lung period (1736-95), were secured, also silk brocades and cut velvets of this latter period. Extensive collections were made of artistic baskets (75) covering all localities of central and southern China where

basketry is made; 84 pieces of old lacquer ware of the Ming, K'ang-hi and K'ien-lung periods, carved or painted with landscapes and designs in colors or gold, or inlaid with scenes in mother-of-pearl. Ancient glass, bone and ivory carvings, bamboo and wood carvings, weapons, fans, musical instruments, tobacco and smoking utensils were also obtained. Specimens were secured of ancient silver together with a remarkable cast figure of a water-buffalo. Many additions were made to the present collection of jade, the new acquisitions amounting to 185 specimens. Ceremonial knives and ornamented disks of enormous size, three unusually large tubes symbolizing the deity Earth, and a comprehensive assortment of jade and other stone implements are deserving of particular mention. A red-lacquered and elaborately carved bridal chair or palanquin, in which the bride, on the day of marriage, is escorted into the bridegroom's house; a large dragon-boat of the same character, which is carried in religious processions, at the annual dragon-boat festival; and an imposing red and gold lacquered bed, adorned with beautiful wood carvings in relief and open-work, of the K'ien-lung period, will make striking objects for exhibition. The curator made it a special point to gather relics of the Manchu dynasty and secured five exceedingly fine imperial costumes of the eighteenth century, of silk tapestry or silk embroidery, elaborate head-dresses of princes and princesses, a complete set of the silk girdles with white jade clasps conferred by the emperor on the princes of the imperial house, six bamboo shades with pictures formed by strips of silk wrapped around the fine bamboo rods and exclusively made for the palace, the dress of a lady of the Manchu aristocracy with the peculiar high coiffure complete with all jewelry, the armor of a Manchu general from the K'ang-hi period (1662-1722), a complete series of the bows used by the Manchu in military examinations for testing the strength of candidates, and fans used in court ceremonies and other objects. After a thorough study of the stage and drama in Peking, fourteen actors' costumes were selected, which will be added to the Hall of Oriental Theatricals. These are the five national heroes, Kwan-ti, Chang Fei, Chu-ko Liang, Liu Pei, and Chao Yün, accompanied by four soldiers; Ma-ku, a benign goddess of blessing; Yang Kwei-fei, a famed court-lady of the T'ang dynasty; an amazon or military heroine; and two very popular figures, an official and his wife from the drama "The Meeting in the Mulberry Garden." All these costumes are complete with head-dresses, coiffures and all of the paraphernalia pertaining to them. It is estimated that the new acquisitions, which number over 2,000, not including the theatrical accessions, will require about 33 exhibition-cases.

As a result of his researches, the curator is planning a publication on China's civilization in the age of the Sung, which will analyze all departments of art which flourished at that time, including novel contributions to the history of Sung pottery.

Reports received during the year from Professor S. Langdon indicate that the joint expedition of Oxford University and Field Museum in Mesopotamia has made good progress in the work of excavation. Mr. E. Mackay, field director, has unearthed the south-east side of the temenos platform on which stood the temple of the prehistoric war-god, Ilbaba, and the goddess of war, Innini or Ishtar. This temple was known as Emeteursag, and beside it on the platform stood the lofty tower in seven stages known as "House of Admiration, the Far-famed Abode." It was hitherto a controversial point whether these lofty ruins which rise out of the plains east of Babylon really represent the site of Kish, the seat of the oldest Sumerian and Semitic rulers. The excavator has fortunately found a stamped brick of Samsuiluna, seventh king of the first dynasty of Babylon (2080-43 B.C.), the inscription on which settles the question definitely and proves that the expedition has actually come upon the lofty stage tower of the capital of the oldest kings and seat of the first empire known to history. Now that the temple of the war-god of ancient Sumer and Akkad has been definitely located, the excavators are rapidly advancing toward the inner temple, where they hope to come upon the temple library. In May, just before the intense heat compelled the cessation of the work, Mr. Mackay found walls built of plano-convex bricks, a positive indication of the oldest Sumerian period. Down to about 2900 B.C. the masons invariably laid their walls with this type of brick, which is not made in moulds, but is fashioned by hand on a flat surface, the top being left convex, and each side bearing two of the mason's finger prints. Near these older walls was found black incised pottery inlaid with white designs. This method of decorating pottery by incrustation seems to have been a Sumerian invention, and provided a substitute for painted designs. A remarkable discovery was made in the tower mentioned above. The original height of the tower cannot have been less than 180 feet, and its four sides measured over 200 feet. The first stage of the tower, which is one of the best preserved of ancient Babylonia, has rows of chambers connected by a corridor. Beneath the pavements of some of these chambers were found inscribed tablets. This is the first known discovery of a series of chambers within a stage tower. Beneath the ruins of a still larger and apparently more ancient mound, Ingharra, two miles east of Oheimer, lie supposedly the palaces of the early kings of Kish, who ruled all of

Sumer and Akkad at various periods from 5000–2872 B.C. Excavations at Ingharra were begun September 15th in connection with those now in progress at Oheimer. The oldest temple ever discovered in Mesopotamia was found on this occasion. Professor S. Langdon left Oxford on December 13th to take personal charge of the expedition.

The results of the work of the Arthur B. Jones expedition to Malaysia were reported last year with reference to the Federated Malay States. At the close of 1922, Dr. Cole, in charge of the expedition, transferred his activities to Central Sumatra to study the Menangkabau of the Padang Highlands. These people, the most advanced of all the Malay tribes, usually live in small villages, the members of which are of the same family or clan. Since the maternal family is the unit of government, it owns the land and controls marriage. The villages are surrounded by terraced fields in which rice, manihot and tobacco are grown, and extensive gardens maintained, while each settlement raises a considerable number of cinnamon trees. While agriculture is the chief occupation, the men are expert wood carvers, silver and gold smiths, and metal workers; the women weave and embroider in gold and silver thread. Careful studies of the social and economic life were carried on, and a collection of about 800 objects gathered, emphasis being laid on wood carving and textiles woven in gold and silver thread. The complete outfit of a bride and groom was secured, and a miniature village was constructed to scale. The Toba Batak of north central Sumatra were next visited, and a collection of more than 400 articles was obtained to illustrate that unique culture. These people, who are just emerging from cannibalism, have a highly developed ceremonial life, which centers in the rites of the magicians. Around these powerful individuals has been developed a cult distinguished by the use of elaborately carved magical staffs, carved heads for the house fronts, a series of magical figures, and by many books of secret formulae. The metal work of this tribe is also of high excellence and their weaving is of good quality. The collection contains examples of their industries, together with the complete front of a carved house. The island of Nias was visited, and considerable material gathered, which represents its fast vanishing culture.

While in Java, the expedition secured 450 specimens of Javanese workmanship to supplement the collection now on exhibition in the Museum. These specimens consist chiefly of metal work, weapons of former times, jewelry, and batik work. Finally, a scouting trip was made into the center of Borneo. Starting from Bandjermassin in southern Borneo, the expedition proceeded up the Barito river to a point just south of the



BLACK, CINNAMON AND GLACIER BEARS.

equator and then struck inland on foot into the country of the Siang Dyak. This tribe does not possess the rich culture found in northern Borneo, but nevertheless a very interesting collection of 200 objects was obtained. Of chief interest is a memorial pole, carved to represent a powerful chief who died some years ago. At the time of its erection a number of captives were sacrificed, and each year since then a human or animal sacrifice has been held in its honor. The collections from the Dutch Indies total more than 2,000 objects. Measurements were made on about 200 individuals; while about 500 photographs illustrate the regions visited.

The work of the Captain Marshall Field Expedition to Colombia reported last year was continued by Assistant Curator Mason from January until July 10th of this year. The investigator's attention was divided between archeological and ethnological research. He spent some time exploring the Sierra Nevada region, but the ancient city of Pochueica supposed to be located there could not be discovered. He made also some ethnological and linguistic studies among the Arhuacos and Goajiros. The result of this year's work is represented by a collection of 822 specimens, which, with the number of 2,851 obtained last year, yield a total of 3,673. The archeological collection differs only in details from that reported in 1922. Stone axe-heads, small pottery vessels, fragments of relief from pottery vessels and carnelian beads are prominent. Special mention may be made of some fine black pottery vessels, an extraordinary black pottery whistle, a few small pendants and similar fine small stone objects, a number of objects of banded reddish stone carved in the shape of spiral shells, several necklaces of unusually fine beads, and a double ivory axe-head covered with gold mosaic, the two latter groups secured from the Goajiro Indians. The collection of Arhuaco ethnology is a small one and was secured with great difficulty, as the villages were practically inaccessible and mostly deserted, and the few natives disinclined to sell. Nevertheless, most of the native industries, implements and ornaments are represented, except for their woven cloths and garments. The largest group of specimens obtained is the collection of knitted bags or mochilas. Those bags which bear geometric designs in color are the most striking for display purposes and art study. The large Goajiro collection was secured in a few days, as the Indian camps are but a short distance from Riohacha and the natives semi-civilized and eager to sell their objects. This collection contains practically all objects made and used by these Indians, except the more esoteric religious and ceremonial objects which, as in the case of the Arhuaco, cannot be secured on short acquaintance. The

largest group of objects is comprised of woven belts or fajas, arrows, necklaces of beads made from black coconut shell, bags of knitted maguey-fiber or cotton, pottery vessels, and small vessels of calabash. Especial mention should be made of the necklaces of fine ancient beads. Wherever traces of ancient occupation were found, notes of everything of importance were taken, but, except for the work at Teran, the first week of the year, little of interest was seen. A total of 383 negatives of archeological sites and other views were taken, also 50 phonographic records of Indian music and songs.

BOTANY.—During the year the Captain Marshall Field botanical expedition to Peru, commenced in 1922, was continued by assistant curator J. F. Macbride and Dr. George S. Bryan of the University of Wisconsin. The latter sailed from New York February 22nd and was joined at Panama by Mr. Macbride, who, having sailed from New Orleans February 14th, had spent the interim collecting in the Canal Zone. He obtained there 250 species, mostly in triplicate, including various interesting plant products of the Panama Republic.

The work performed by the expedition was definitely divided; Dr. Bryan devoted his entire attention to photography and the non-flowering plants, mosses, lichens, liverworts and fungi, while Mr. Macbride secured the flowering groups. The collectors co-operated in obtaining the ferns.

Lima, Peru, was reached March 6th, where the collectors were entertained by the physician-botanist, Dr. A. Aspiazú. Preparations for the work in the interior were completed by the 11th, on which date actual collecting began at Chosica in the Andean foothills, an hour's train ride from Lima.

As the heavier camp and botanical equipment had been stored at Huanuco, the base for last year's operations, the expedition proceeded to this town which lies 60 miles down the Huallaga River from Cerro de Pasco. Huanuco was reached April 5 with about 400 numbers collected, stops having been made en route at various altitudes from 8,000 to 15,500 feet. These stops included the railroad stations of Matucana and Rio Blanco, on the coastal slope of the western Andes, and the Inter-Andean railroad terminals, La Oroya and Cerro de Pasco. At these two mining towns many courtesies were received from the officials of the Cerro de Pasco Copper Corporation, notably Mr. Colley, Mr. Miles Morgan and Mr. R. C. Philpott. The journey by pack-train from Cerro de Pasco was broken by short stops for collecting at La Quinua, Huariaca, Ambo and Huanuco.

Mito and Cani, villages about 15 miles west of Huanuco, were next visited where some 300 numbers were collected, after which work was resumed at the base, Huanuco, and preparations made for a trip about 100 miles east, by trail, to Pozuzo situated at an altitude of 2,200 feet. This journey took the expedition across the eastern Cordillera mountains at an altitude of about 12,000 feet. Collections, totaling over 1,500 numbers of flowering and 500 non-flowering plants, were secured at twelve localities, the most important camps having been made at Piedra Grande, Muña, Tambo de Vaca and Cushi. These localities are in tropical upper Amazonian country, which, with its mile-deep river canyons, offers much variety in vegetation. At Pozuzo the expedition was greatly indebted to the hospitality of Sr. Ismael Ballisteros.

The collectors, accompanied by their three Peruvian helpers with 12 cargo beasts, returned to Huanuco from Pozuzo on foot, reaching the base town July 10. There saddle horses were obtained, the party leaving July 15 for the Japanese hacienda Pampayacu which is located at the mouth of the Rio Chinchao about four days' trip below Huanuco. Collection en route was especially aided by the hospitality of Sr. E. Malatesta at his hacienda Villcabamba. Through the courtesy of Mr. M. Sawada of Huanuco and his manager at Pampayacu, Mr. S. Kusumara, several days were spent in work at Pampayacu, which resulted in large collections.

On August 6 the collectors were again in Huanuco and prepared for the return journey to the coast. At La Oroya, however, a side trip was made to La Merced, 60 miles farther in the interior, for the purpose of comparing the tropical vegetation there with that which had been studied at the more northern regions about Pozuzo and Chinchao. As Dr. Bryan had to resume his University work, he left on August 13, and after some collecting of marine algae near Lima sailed for New York August 29. Mr. Macbride continued the work at La Merced until September 7, securing over 500 numbers. He was very hospitably entertained by a local naturalist, Sr. Carlos Schunke, who also aided him greatly in his work. Upon his return to La Oroya September 8, a hurried trip was made by rail to Huancayo where some interesting economic material, such as native foods, fibers and medicines, was obtained at the great fall market. Some days (September 13-25) were spent collecting in the hills about Lima, where he was kindly assisted by Dr. A. Weberbauer, the distinguished botanist.

The expedition secured in all 4,250 numbers, or about 11,000 specimens, of which about 750 numbers are Cryptogamic. The latter, gathered by Dr. Bryan, probably constitute the largest single collection of non-flowering plants ever made in South America.

GEOLOGY.—Under the auspices of the Capt. Marshall Field Fund a second expedition to Brazil for the purpose of collecting gem, mineral and ore specimens was made by the Curator. Exploration on this trip was carried on chiefly in the state of Bahia.

It was deemed especially desirable to visit a region about the headwaters of the Paraguassu river, where besides ordinary diamonds, practically all the black diamonds or carbonados used in various industries are obtained. This district can ordinarily be reached directly from the city of Bahia by means of a few days travel by rail, steamer and mule, but on arriving at Bahia, it was learned that a serious epidemic of fever in the diamondiferous region made it inadvisable to visit it at that time. Accordingly a much more circuitous course was taken which enabled much of the region to be seen without passing through the infected district.

At the city of Bahia, collections of typical rocks and minerals of the region were made, and from the State Exposition in progress at the time specimens of various ores and minerals obtained. Journey was then made by rail to Joazeiro, on the San Francisco river, manganese and chromium ores being collected on the way.

The San Francisco was then ascended to Chique-Chique, a city located on the western border of the Chapada Diamantina or diamond-bearing district. By crossing this district in a south-easterly direction it was possible to traverse a large area where minerals are obtained at various points. Travel in this region is confined to walking or mule riding and as the latter method seemed preferable, at Chique-Chique an outfit of nine mules with drivers and supplies was secured. At Chique-Chique a number of good specimens of commercial rock crystal and other minerals were collected. San Ignacio was the next of the important producing districts visited. Here the first of the diamond-bearing conglomerates were seen and a number of specimens collected. At Gentio a well-known auriferous area was crossed and a number of samples taken. Subsequent to this an extensive limestone area was traversed which yielded little in the way of minerals but at the hamlet of Mulungu in this area a hitherto unknown deposit of fossil bones of an extinct giant ground-sloth and of other extinct animals was found. Though the expedition was not equipped for transporting large quantities of this material, a well preserved pelvis, a portion of a skull with teeth and some leg bones were successfully collected and transported. At the eastern edge of the Chapada Diamantina two important diamond-bearing localities, Palmeiras and Mucuji, were visited and good specimens of the various kinds of diamonds and

the accompanying minerals occurring there were obtained. These specimens included ordinary diamonds, carbonados, a Balas diamond and typical, associated minerals.

Journey was then made southward through the mining regions of Rio das Contas to Bom Jesus dos Meiras where some recently opened mines of emerald, topaz and other minerals were visited and valuable specimens, many of which were of gem quality, were obtained.

The advent of the rainy season making it unadvisable to go farther into the interior, return was made to Bahia. While it is not possible as yet to fully tabulate the results of the trip, several hundred gem and mineral specimens were collected, besides ores and many specimens illustrating other geological features. Some zoological and botanical specimens were also collected. Several hundred photographs were made in the regions visited, some of the localities photographed being little if any known to science. The distance travelled on mule-back was about 700 miles and the time occupied three and a half months.

The Curator was accompanied throughout the trip by Mr. E. Jacy Monteiro, an engineer of Rio de Janeiro, who rendered valuable service. Many courtesies and helpful cooperation were received from various residents of the regions visited, special acknowledgements being due to Coronel Manoel Alcantara de Carvalho of Gamaleiras, Coronel Agrario de Magalhaes Avelino of Chique-Chique, Coronel Jose Alvez of Palmeiras and Mr. Frederick E. Johnson of the Central Brazil Presbyterian Mission.

Previous to the Bahian trip the Curator spent some time in Rio de Janeiro in order to obtain information and make needed preparations.

During this period he carried on negotiations which resulted in securing for the Museum what is believed to be the largest specimen of gem topaz ever found. This is a single crystal weighing 90 lbs., which is practically all of gem quality. An entire meteorite from a previously unrepresented Brazilian locality was also obtained. This meteorite is a complete iron individual. Valuable specimens of Brazilian gems of unusually large size and high quality were also obtained. These included an aquamarine of 180 carats, a large amethyst cameo, a bracelet of Brazilian tourmalines, a large rubellite and a blue topaz of 35 carats weight.

Various Government and other officials as well as private individuals rendered generous assistance during this period, especial mention being due to Dr. Antonio Olyntho dos Santos Pires, Chief of the Brazilian Exposition, Drs. Horace E. Williams and Jorge B. de Araujo Ferraz of the Servico Geologico of Brazil, Dr. John H. Janney of the International Health Board and Mr. Wm. G. Homeyer of Kodak Brasileira, Ltd.

The Captain Marshall Field Expedition for Vertebrate Paleontology, with Associate Curator E. S. Riggs and Preparators G. F. Sternberg and J. B. Abbott, as chief personnel, has remained in Argentina throughout the year.

Owing to the fact that Patagonia was probably during Cenozoic time an isolated continent, upon which a system of mammalian life which was quite distinct from that of the Northern Hemisphere flourished, and since the Museum has hitherto had only a small and fragmentary series from a single period of this area, the party devoted itself chiefly to making as complete collections as possible of the fossil mammals of Patagonia.

Work was begun in the southern extremity of that country, near the Port of Rio Gallegos, since in the Santa Cruzean formation there the extinct fauna was best known and specimens could be most readily obtained. Beginning with the first days of January, active collecting was carried on during the remainder of the southern summer. The shores of bays and inlets and the exposed sea-wall of the Atlantic proved to be the most fertile collecting grounds, and considerable material was obtained until the approach of winter and first falls of snow in May, made it advisable to find winter quarters. In search of more favorable conditions therefore the party moved northward. In late summer however, a single digression was made in order to investigate a half-authentic report of a fossil "Tertiary man" and to visit an alleged "buried city." The former was found to be a concretion, and the latter a lava dike.

The journey northward was undertaken by motor car, a geological reconnoissance being made en route from Santa Cruz to Commodore Rivadavia. At the latter port, heavy snows, followed by rains and impassable roads, arrested the progress of the expedition, at the middle of June. A winter camp was then established. Collectors Sternberg and Abbott carried on such work as weather permitted, while Associate Curator Riggs proceeded to Buenos Aires to arrange certain formalities preparatory to shipping the collections previously made. The latter task required securing permission from an Argentina National Commission of Museum Directors. Repeated conferences were held with the members of the Commission, the collection was transported to the Museo de La Plata, and a large part of it unpacked, unwrapped, displayed, inspected, re-wrapped, re-packed and stored. After two months of such labors, and the seizure of such specimens as were recognized by the Commission as new to science, the necessary permit was granted. The collection from the Santa Cruz formation, consisting of 43 boxes of fossils was thus freed, and in December was shipped to the Museum.



● INDICATES LOCALITIES FROM W O



Specimens were received in 1923.

The second field problem undertaken by the expedition was to find fossil-bearing localities in, and make collections from, the geological formation designated as the Deseado.

While stormy weather and impassable roads blocked for a time repeated efforts of the collectors to move from winter quarters or to resume active work, late in August a region of high, snowy pampa lying to the northwest of Commodoro Rivadavia was successfully traversed and a camp was established on the Rio Chico of Chubut. Fossil-collecting was there resumed. During the period of enforced hibernation, some collections of fossil cetaceans, fossil invertebrates, and of recent birds and mammals, were made.

A movement toward Lago Coluhe Huapi was arrested by recurring snows and heavy rains, and the party detained until the end of October. During that period a wide area to the westward of the Rio Chico was explored by means of horse transportation, this method having been heretofore impossible because of a shortage of feed. However, in a wide expanse of Tertiary hills in this area no fossil-bearing localities were discovered.

In November the party moved by motor toward the region of Lakes Munsters and Coluhe Huapi. Collections were made from various localities of the Deseado formation about the lakes and along the Rio Senger. The occurrence of dinosaurian fossils was noted, but it was not deemed advisable to collect these ponderous specimens from localities so far from the Museum. The San Bernardo Range (of hills) was reconnoitered in quest of new fossil-bearing localities and the complex geology of the region noted.

The year ended with a movement to the north and west from Colonia Sarmiento.

The results attained during the year may be enumerated as follows: From the Santa Cruzean and adjacent formations, to westward and northward of the Port of Rio Gallegos, a collection of 262 specimens of fossil mammals, 4 specimens of fossil birds, and 64 specimens of fossil shells, was made. A few lithological and archeological specimens, as well as a limited number of recent mammals, were also collected there.

The occurrence of Sauropod Dinosaurs, comparable to those of the Northern Hemisphere, in the vicinity of Lake Cardiel, Territory of Santa Cruz, was determined. In the vicinity of Rio Gallegos and Rio Coyle, fifty negatives of geological and general interest, and nine rolls of cinema film were made.

One fossil cetacean and 65 fossil invertebrates were collected from the Patagonian Beds near Comodoro Rivadavia, and eighteen negatives were made showing the geological features and the petroleum fields near the port.

From the Deseado formation at various localities, 54 specimens of fossil mammals, one of fossil bird, four of fossil fish, and 37 of fossil invertebrates, and from the Cretaceous formation, one specimen of fossil reptile, were collected.

Of recent animals there were collected five mammal skeletons, 7 mammal skulls, 18 mammals in formalin, 9 lizards in formalin, 21 marine invertebrates, 20 prepared bird skins, 2 rhea nests with eggs, and 1 martin nest of eggs.

Of archeological specimens, 64 finished Indian celts, 48 rough celts and scrapers, and 11 boladores, martels and axes were collected and of botanical specimens 450 pressed plants and 7 dried shrubs.

ZOOLOGY.—Five zoological expeditions of major importance were in the field during the year. Two of these were continuing work begun in 1922, two were completed in 1923, and one was organized and started late in December.

At the beginning of the year, the Captain Marshall Field Peruvian Expedition was still engaged in collecting specimens native to central Peru. The expedition was divided into two groups, one, consisting of assistant curator Heller and Mrs. Heller, collected mammals, while assistant curator Zimmer devoted his time to the collection of birds. Using the towns of Huanuco and Ambo as bases, the expedition worked twenty localities along the Huallaga and Marañon valleys, differing in altitude from 4,000 to 14,000 feet. Shortly after the first of the year, Mr. Zimmer proceeded over the Andean mountains to the valley of the Chanchamayo River where additional material was collected. Leaving this valley, he proceeded by trail to Puerto Bermudez, the final collecting station. Starting on the Pichis River, Mr. Zimmer then worked toward the coast, making a few collections en route, touching also at the towns of Manaos and Pará, on the lower stretches of the Amazon. Meanwhile, Mr. and Mrs. Heller after having worked down the Huallaga to Tingo Maria, returned to Huanuco and crossed by the difficult trail from Huanuco to Pozuzo, where extensive additions were made to the collections. They worked down the Pachitea River to the Ucayali and continued to Iquitos whence they took steamer down the Amazon. At Pará, near the mouth

of the Amazon, another stop was made and a number of important specimens were purchased. Here, also, additions were made to a collection of live animals which the expedition brought to Chicago for the Lincoln Park Zoo.

The specimens of mammals and birds obtained by the Peruvian expedition amount to a total of 3,500, forming one of the largest collections of vertebrates ever brought out of the Andean region. Careful study of the mammals has not yet been possible, but it is evident the collection contains various new species and others exceedingly rare. Many species of monkeys, usually difficult to secure, were obtained in large numbers. Among them are several specimens of two species of the Ouakaris or Bald-faced Monkeys, and one of the Imperial Marmoset, a very rare species characterized by a long flowing "moustache" of very suggestive appearance.

The habitat was discovered of the large spotted rodent called Rucupi, a species of the genus *Dinomys*, only genus of the family Dinomyidae, and known mainly from a few scattered specimens in European museums. A series of sixteen skulls of this animal was obtained, together with seven skins and one living animal which was successfully transported to Chicago where it is now living in good health in the Lincoln Park Zoo, the first of its kind ever to enter the United States alive.

The birds obtained by the expedition number some 400 species and subspecies, mostly new to the Museum's collections and including some rare forms not previously represented in any American museum, besides others quite new to science. Descriptions of ten of the new forms have been made for future publication. The collection is especially rich in humming birds, of which not less than thirty forms were obtained.

The Captain Marshall Field Expedition to Chile and Argentina was well under way at the beginning of the year, having started from Chicago in November, 1922. As noted in the last annual report, this expedition was in charge of the Curator of Zoology who was accompanied by Mr. C. C. Sanborn of the Division of Birds and Mr. Boardman Conover, volunteer associate. Through the courtesy of Dr. E. Moore, Director of the National Museum of Chile, the taxidermist of this museum, Sr. Luis Moreira, was granted leave of absence to enter the employ of the expedition for a period of three months. Valuable advice and assistance to the expedition were rendered also by Dr. Carlos Porter of the same institution, and by Mr. Alfred Houston of the Braden Copper Company. For many courtesies and privileges, special acknowledgment is due the officers and employees of the Compañía Industrial del Aysen. Work was begun on the island of Chiloe, on the well watered and heavily

forested coast of south central Chile. Later, the party divided and various points in southern Chile were visited. An important trip was made southward through the Guaiteca Islands to the mouth of the Rio Aysen and thence inland across the mountains to the edge of the Patagonian pampas, near the Chile-Argentina boundary in about S. Lat. $45^{\circ} 50'$. Returning northward, various points in central Chile were worked, and in Santiago some days were spent in studying the collections of the National Museum of Chile, especially in making careful notes on the important types of mammals preserved there. Late in May, Dr. Osgood and Mr. Conover passed on to Argentina via the Transandine Railroad, leaving Mr. Sanborn to continue working northward in Chile. In Argentina, a series of short but very effective trips were made in the provinces of Mendoza, Buenos Aires, Tucuman, Jujuy, and Misiones, after which return to the United States was made in the month of August with brief stops in São Paulo and Rio de Janeiro, Brazil.

At the end of the year, Mr. Sanborn was still working in northern Chile, having passed successively from the province of Valparaiso to Coquimbo, Copiapo and Antofagasta. This took him into the desert region of northern Chile where conditions are unfavorable for collecting specimens in large quantities, but where the few that can be obtained are of very great interest and value. He passed from one isolated oasis to another, in each case making practically complete collections of all the vertebrates, mammals, birds, reptiles and amphibians.

The results of this expedition are too numerous and varied to be mentioned in detail. The number of specimens collected approximates 3,000, equally divided among mammals, birds and cold-blooded vertebrates. Not only most of the species but most of the genera and not a few of the families represented are new to the Museum's collections, and they bring to the United States a basis for study and understanding of the whole fauna of the southern half of South America. The continued work in Chile from the deserts of the north to the forests of the south, and from the coast to the crest of the Andes has produced a collection of the animals of this country which is doubtless the most comprehensive in existence. Much desirable material for exhibition also was obtained, including nearly all the larger animals of Chile. Among interesting mammals are the tiny deer known as the Pudu, the large mountain deer called Huemul, the wild llama or Guanaco, the fur-bearing rodent Coypu or Nutria, the rare and beautiful Chinchilla, and the small blind armadillo called Pichiciego. The birds collected include the Black-necked Swan, the Andean Flamingo, the flightless Steamer Duck, the Torrent Duck, the Penguin, and many species of smaller size, among

which are a number which preliminary study shows are new to science.

The Captain Marshall Field Expedition to British Honduras and Honduras engaged the time of assistant curator Schmidt and taxidermist Walters from January 18th to June 2nd. The expedition sailed from New Orleans, landing at Belize on January 23rd. Five weeks were spent in British Honduras, principally at Belize and at the United Fruit Company plantation at Middlesex. At Belize, a small crocodile was secured which proves to be a "lost" species not collected during the past fifty years. As this crocodile is strikingly different from the common American crocodile, the Museum is fortunate in having not only the specimens but a plaster mold from which a celluloid model has been prepared by Mr. Walters. From Belize, the party sailed via schooner to Puerto Cortes, Honduras. In Honduras, the principal base of operations was San Pedro in the valley of Uluá and Chamelecon Rivers. The ranch of Mr. M. S. Miles, at the foot of the Espiritu Santo Mountains offered many facilities for work on plaster molds. The field work of the expedition was further facilitated by the hospitality of Mr. Miles, as well as by the advice of Dr. S. M. Waller of San Pedro. The principal collections in Honduras were made in the tropical lowland at San Pedro and at Lake Ticamaya, east of San Pedro; on the Espiritu Santo Mountains, west of San Pedro at altitudes above 4,500 feet, in a hardwood cloud-forest; and in the course of a rapid transcontinental survey from Puerto Cortes via Lake Yojoa, Siguatepeque, and Tegucigalpa to San Lorenzo on the Gulf of Fonseca. Complete data and collections for a habitat group of the American Crocodile were secured at Lake Ticamaya, including plaster molds of crocodiles varying in size from four to eleven feet in length. These molds will be used later for reproduction in celluloid. The transportation of these large plaster molds was solved by constructing special packing boxes and lashing the molds to an inside framework. The fifty-two molds secured by the expedition reached the Museum without breakage. A collection of tree-climbing salamanders, living almost entirely in the air-plants which cover the trees, together with three new species of tree frogs, was made in the mountain cloud-forest. One of the tree frogs is especially noteworthy as it breeds in the water contained in the leaf-whorls of the bromeliaceous air-plants. The collections secured at Lake Yojoa, Siguatepeque, and Tegucigalpa brought out the strong contrast between the faunas found along the Pacific side of Central America and those established along the Caribbean sea. The total collections of the expedition number 1,275 specimens of amphibians and reptiles, 250 fishes, 50 bird-skins and 50 mammals.

The Captain Marshall Field Expedition to Louisiana and Texas was conducted by assistant curator Weed during July, August and September. The first half of the time was spent in southeastern Louisiana, a region which has been very largely neglected by students of cold-blooded vertebrates. Owing to natural conditions, this region is inhabited by a very large number of species, perhaps the largest number in any region of similar size in North America. Unexpectedly heavy rain through the lower Mississippi valley made fish collecting difficult but helped materially in the collecting of frogs and toads. Much assistance was rendered the expedition by Mr. Percy Viosca, Jr., of New Orleans, who has a very intimate knowledge of the country explored. In Texas, the region north and west of Brownsville was studied and a large number of fishes representing most of the fresh-water species of the region were collected. The work in this region was materially aided by the cooperation of Mr. R. D. Camp of Brownsville. The results furnish a basis for much additional knowledge concerning the distribution and relationship of the fishes of the lower Mississippi valley. The specimens collected number 10,000 fishes and 750 reptiles and amphibians.

The final expedition of the year had Central Africa as its field and was despatched late in November. This expedition was organized under the auspices of Captain Marshall Field and Mr. Alfred M. Collins of Philadelphia, a Patron of the Museum. The party consisted of Mr. Collins, assistant curator Heller of the Museum, and Mr. T. Alexander Barns of London. They sailed from England December 5th for the port of Dar-es-Salaam on the east coast of Africa. They plan to push inland at once and work in little known parts of eastern Congo, making general zoological collections and passing northward to return via the Nile during the year 1924. The expedition will attempt to secure specimens of some of the rarer mammals of Central Africa, such as the White Rhino, the Okapi, the Bongo, the Giant Eland, and the Gorilla, any one of which would be of great value to the Museum in supplementing its present collections which are almost wholly from Somaliland and East Africa.

The following list indicates the various expeditions in the field during the year.

Locality	Collector	Material
CHINA	Berthold Laufer	Ethnological Collections Archaeological Collections
MESOPOTAMIA	S. H. Langdon	Archaeological Collections.
COLOMBIA	J. Alden Mason	Archaeological Collections.
MALAYSIA	Fay-Cooper Cole	Ethnological Collections.



COMMON AND WHITE GYRFALCONS.

TAXIDERM BY ASHLEY HINE.

One eighth natural size.

PERU	J. F. MacBride and Dr. George S. Bryan	Herbarium and Economic Specimens.
BRAZIL	O. C. Farrington	Gems, Ores and Minerals.
PATAGONIA	Elmer S. Riggs J. F. Abbott and G. F. Sternberg	Paleontological Specimens.
CHILE, ARGENTINE, AND BRAZIL	W. H. Osgood Boardman Conover	Mammals and Birds.
PERU AND BRAZIL . . .	Edmund Heller Mrs. Heller	Mammals.
CHILE.	C. C. Sanborn	Mammals, Birds and Reptiles.
PERU AND BRAZIL . . .	John T. Zimmer	Birds.
HONDURAS AND BRITISH HONDURAS . .	K. P. Schmidt L. L. Walters	Reptiles and Batrachians.
LOUISIANA AND TEXAS .	A. C. Weed	Fishes and Batrachians.
CENTRAL AFRICA. . . .	Edmund Heller A. M. Collins T. A. Barns	Mammals.

INSTALLATION, RE-ARRANGEMENT AND PERMANENT IMPROVEMENT

ANTHROPOLOGY.—Seventy-one new cases were installed during the year in the Department of Anthropology.

Shortly before Christmas 1922, it was decided to open the Egyptian Hall to the public on January 20th. This left four weeks in which to complete the necessary work, placed in charge of Assistant Curator Owen. The nine standard cases previously brought from Ayer Hall required merely readjustment of the material, as displayed upon the shelves, but the 17 special cases containing mummies, in consequence of the plan to enlarge this exhibit, required a regrouping and expansion of the number of mummies into 22 cases. This necessitated the re-installation of 18 of the cases in the mummy group. Eight frames containing papyri and 39 framed mortuary textiles were placed upon the north wall of the hall, as well as 4 large frames containing complete mummy wrappings. A large case of limestone coffin covers was installed in the center of the hall. In the recesses of six pilasters were displayed 13 Mohammedan balcony gratings and colored-glass windows from old houses in Cairo. Two cases of plaster casts of rare portrait statuary, the originals of which are scattered in a number of museums of the Old World, were placed in the recesses of its two pilasters. The mortuary boat of Sesostris III, found in the sands near his pyramid at Dashur by de Morgan in 1894, was re-assembled and placed in a special case. The figures of

four Sekhmet or Lion Goddesses were placed in the west end of the hall. This work accomplished, the hall was opened to the public, in conjunction with the Hall of Oriental Theatricals. Later, three standard cases containing amulets, jewelry, and articles for the toilet, Ushebti figures, glazed and glass ware, tools and weapons and one case of ancient Egyptian weights and Coptic objects of bronze and iron were installed. A case of mummied birds and small mammals, wooden coffin covers and tomb furniture was likewise placed on exhibition. The cut leather corselet of an Egyptian priest is shown in a small case especially built for it. Two Roman wine jars have been installed upon marble bases in the northeast and northwest corners of Stanley Field Hall. The two Roman mills from Bosco Reale, exhibited in Edward E. Ayer Hall, were transferred to a smaller case. Case 23, Stanley Field Hall, containing Indian blankets, was re-installed. In its new organization it is entirely given over to Navaho blankets, all of which were presented by Homer E. Sargent.

The collection of 190 pewter objects presented by Mr. Ayer last January was labeled and installed by the curator in four square cases and two 6-foot wall cases placed in Ayer Hall, the installation of which is thereby completed.

Thirty-seven cases of North American ethnology (Plains, Plateau and Salish tribes) have been installed and placed on exhibition this year by Assistant Curator Linton. This completes the re-installation of Hall 5 and one-half of Hall 4. At the present time Hall 4 contains collections from nearly twenty tribes living in three distinct culture-areas and also the archeological material obtained from the Hopewell group of mounds. In the re-organization planned, the northwest quarter of the hall will be devoted to the Cree, Interior Salish, and other tribes of the Canadian Northwest. The northeastern quarter will be devoted to the Salish tribes of the north Pacific coast, whose culture represents a simple and attenuated form of the Northwest Coast culture illustrated in the eastern end of Hall 3. The southwestern quarter of the hall will be devoted to the eastern woodlands with small exhibits from the southeastern tribes and Iroquois and more extensive exhibits from the Central Algonquian tribes, especially the Sauk and Fox. These collections will illustrate the arts and industries of the semi-sedentary agricultural tribes who occupied the state of Illinois at the time of the colonization. Special stress will be laid upon the features in which these tribes differed from the nomadic tribes of the Plains, whose life is represented in Hall 5. The projected exhibitions should be of great value to teachers of local history, as they are designed to give a correct

picture of the life of the Indians in and about Chicago in the early nineteenth century. The southeastern quarter of the hall will be devoted to the tribes of the Plateau culture area. These tribes had many features in common with those of the Plains area, but differed from them in several details, the most noticeable being their extensive use of basketry.

Twenty cases were installed by Assistant Curator Lewis for exhibition in Joseph N. Field Hall. Seventeen of this number are re-installations, and three cases contain new material.

One of the Chinese screens presented by Mrs. Marshall Field, was removed from Hall 23, which is assigned to contain the Ayer collection of pewter, and was placed on the second floor at the north end of the stairway landing.

Sculptures from India and Java were re-installed by the curator, the two cases being placed in Hall 32.

Six stands holding a map of China and large labels giving chronological tables for the classification of Chinese antiquities have been installed in Hall 24. A new base was made for the case containing the model of the Taj Mahal in Hall 32.

In Hall 9 five cases were changed in order to make a more suitable grouping according to tribes, as well as to gain more space for the Ifugao bench. The position of ten cases, including the seal-hunt group, was changed in Mary E. Sturges Hall, to make better aisles, grouping, and lighting, as well as additional space for a four-foot case of Tlingit basketry and a case of Athapascan clothing from the Yukon, which geographically fits in between the Eskimo and Tlingit, but which had been placed temporarily in Hall 4. In Hall 6 one four-foot case containing 13 Hupa storage baskets was emptied and the case transferred to Hall 3 for additional Tlingit baskets. The positions of eighteen cases were shifted, which results in an improved grouping according to tribes.

Three cases were rebuilt for Egyptian mummies. A new case was made for the Egyptian leather corselet. One case was cut down in size for the two Roman mills in Edward E. Ayer Hall. A series of shelves was built at the north end of the fourth floor for storage of archeological material. Store rooms of compressed steel were built at the south end of the fourth floor and are now complete except for the shelving. Additional shelving was built in Room 66 for the storage of collections received from the Captain Marshall Field Expedition to China.

The plaster busts of American Indians were unpacked and arranged on racks in Room 35. The numerous shipments received from the

field made heavy demands on the time of the staff in checking and storing the new acquisitions.

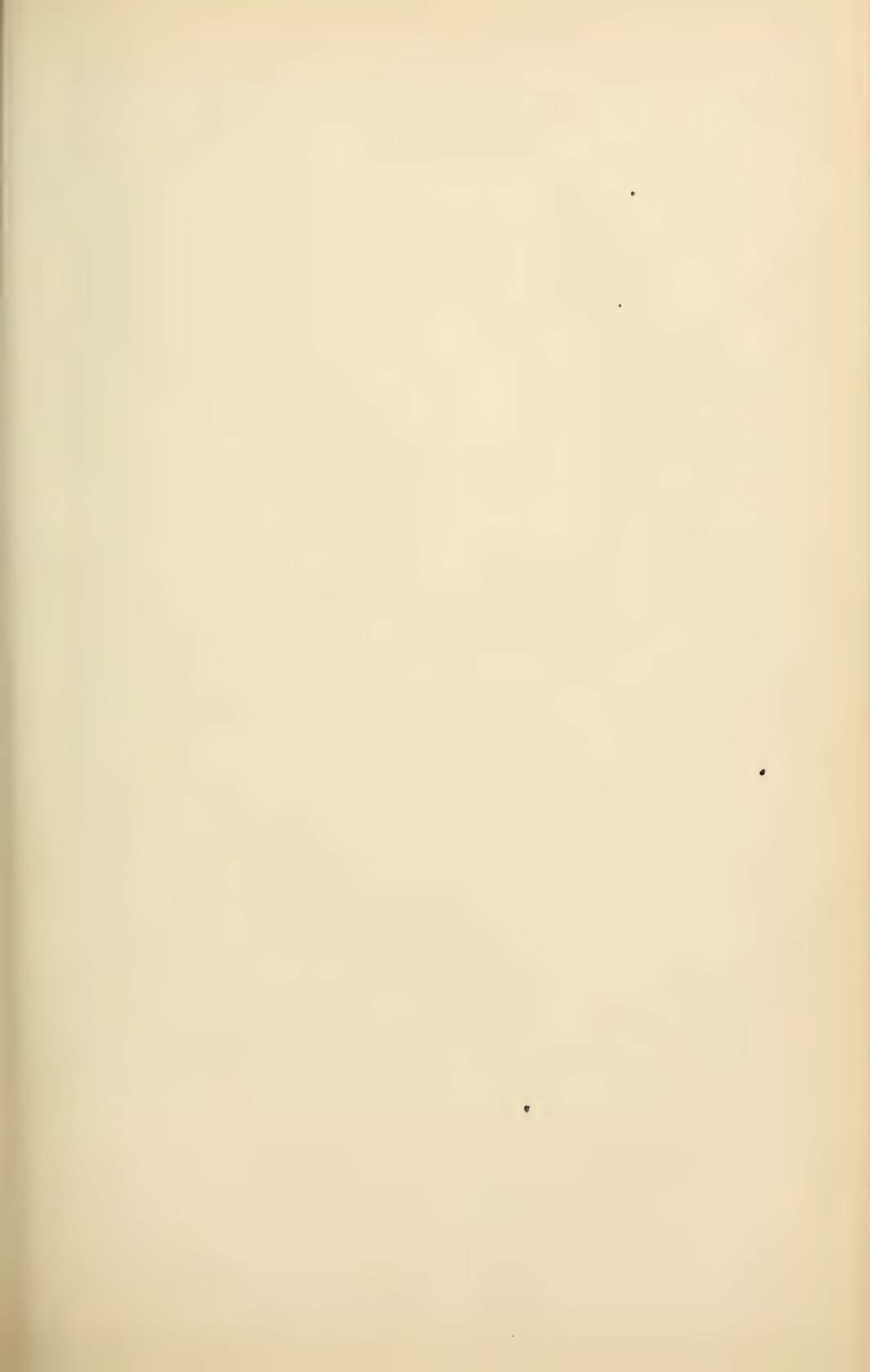
The carved and lacquered Chinese bed, the dragon-boat and the bridal palanquin obtained by the curator in China were assembled and the necessary repairs completed.

A new type of screen for exhibition cases has been devised. It consists of boards of a three-ply veneer, $1\frac{1}{4}$ inches thick, while the old screen was 2 inches thick and proportionately heavy and unwieldy. It required the combined effort of four men to set up this screen, while the new one can easily be handled by a single man. It can be made within two or three days, while it required a week or longer to make one of the old type.

In the modeling section, 93 damaged specimens were repaired, 11 ancient Chinese iron objects treated, 6 papier-maché forms for the installation of costumes were completed and repair work was finished on the miniature group of the Pawnee sacred bundles ceremony. Work was continued on the New Guinea village group, which was largely confined to the making of coconut palms. Seventeen trunks which had to be modeled by hand are now ready. The modeler designed and constructed a machine for making celluloid coconut leaflets; and also made a model and moulds of miniature nuts of 33 sizes. Two trees are practically completed, save for the final coloring of the leaflets.

The Victor X-Ray Corporation of Chicago volunteered its services in taking radiographs of suitable museum objects, and under the direction of Mr. E. C. Jerman, 30 films 14×17 were taken of eight Peruvian and Egyptian mummies of three adult men, birds and small mammals. It is expected that investigations based on these radiographs will yield interesting results and that a study of the condition of the skeletons, as revealed by the radiographs, will excite the curiosity of both the physical anthropologist and the pathologist.

BOTANY.—Early in the year the exhibits in the Department of Botany were rearranged. Wherever possible the bulk of economic plant material was separated from the more purely botanical exhibits, which include the reproductions and models of plants. These will eventually fill the large east hall, on the second floor, known as the Hall of Plant Life. By this change the arrangement of the economic plant material is simplified. Fibres and textiles are now placed together. The food products are grouped, beginning with the small grains, followed by starches, sugars, fats of vegetable origin, chocolate, coffee, tea and spices. Resins and gums, lac and lacquer, wood distillation products,





THE FLOWER- AND FRUIT-BEARING TRUNK OF A CANNON-BALL TREE FROM GUIANA.

A NEW EXHIBIT IN THE HALL OF PLANT LIFE.

paper making materials and paper pulp products, tanning materials and dye woods, etc., are now also grouped, so that the visitor especially interested in any one of these classes of raw materials, or their products, may find them assembled for comparison, rather than distributed among the plant families to which they botanically belong. The new arrangement is at present in far from perfect order, since the installation in most cases was originally made with a view to a botanical sequence.

The Palms among the larger plant families, alone have been selected for a comprehensive or monographic display, covering both their botanic and economic features. The Museum's collection of palms is now especially rich in both respects and the space required for the rather large specimens is now available. All of the palm material secured by the Stanley Field Guiana Expedition of 1922, named and catalogued, is ready for installation.

In the Hall of Plant Life a decided change in appearance has been effected by painting the interior of cases with a light color. So much is to be said in favor of black as a background for many and varied classes of exhibits, particularly in point of economy and convenience of installation, that its use will be continued in all other halls of the department. However, it proved unsatisfactory as a setting for the reproductions of plants in which a lifelike appearance is desired. The reinstallation of the exhibits in this hall, required by the new plan of arrangement and by the change in background color, has been carried on as rapidly as possible.

The exhibits have been increased by a number of new reproductions and models of plants. The Cycads are now represented by a reproduction of the Comptie (*Zamia floridana*), one of the few Cycads native in the United States. A complete female plant is shown, bearing a ripe fruiting cone. Some models of the seed-bearing leaves of a Cycas have been added for purposes of comparison.

For the representation of the adjoining fossil Cycads, a beginning has been made by the reconstruction, in the form of a model, of a fossil Cycad flower. This work has been carried on with the co-operation of Professor Wieland of Yale, the chief investigator of this extinct group. It is intended to illustrate it further, by the reconstruction of a branch of one of the small-leaved tree-like Cycadeoids and by some of the simpler "flowers" of these plants.

The Verbena family has been illustrated by the "Black Mangrove," *Avicennia*, one of the principal members of the Mangrove formation of tropical shores, and biologically perhaps the most interesting of the

plants of its family. An entire young tree with its remarkable clump of breathing roots was dug up, washed free of adhering clay and sent to the Museum by the Stanley Field Guiana Expedition of 1922. The foliage, flowers and fruits have been replaced by reproductions and the tree is now represented as it grew in the Guiana swamp, partly imbedded in mud. Being one of the so-called viviparous plants, its seedlings are of interest and are shown in various stages of growth on the ground below the tree. In the adjoining half of the case may be seen specimens of the peculiar aerial roots of the older trees.

A Cacao or Chocolate tree from Guiana forms another noteworthy accession. The foliage, flower and fruits of this tree also have been restored and the result is a life-like representation of the tree as it grew on a Demerara cacao plantation. A new glass model of an enlarged flower of the Cacao has been added to the present exhibit.

The Gamboge, or "vegetable tallow" family, has been illustrated by a reproduction of a flowering branch of the large-flowered *Clusia*, interesting on account of its showy magnolia-like flowers, and on account of the curious strangling habit of these trees, which has earned for them the appellation "Matapalo" or tree-killers. The *Clusia*, with its thick shining leaves and large white flowers, is undoubtedly one of the handsomest of the flowering branches in the hall. As a further illustration of the fruit-characters in this family of plants, already represented by the Mangosteen, there has been added a fruiting branch of the well-known *Mammea*.

To the Madder family a reproduction of a flowering branch of the East Indian "Silver Leaf" or "Princess Leaf" (*Mussaenda*) has been added. The interesting feature of this is the expansion of one of the calyx lobes of the small orange-red flower, into a large, white, leaf-like structure. In the Trumpet Vine family a reproduction of a fruiting branch of the Calabash tree adds another type of fruit to those already there. A reproduction, from material obtained from Texas, has also been completed of a clump of the common Mistletoe. The Orchid case has been enriched by a reproduction of a plant of the native Pink Lady Slipper (*Cypripedium*). For the exhibit of grasses, an enlarged model has been made of a germinating grain of Wheat. A series of Sweet Pea flowers has been modeled and colored to illustrate latent characters in heredity.

A large part of the work required to restore a flowering and fruiting trunk of a Cannon-ball tree has been performed during the year, and progress has been made on several other reproductions of local and tropical plants.

GEOLOGY.—The Borden collection of Indiana is being installed in Hall 34 as fast as it can be prepared. To make room for this extensive collection, material of the same periods and character but of less exhibition value is removed from the cases and transferred to the study collections. The fronts of four pyramidal cases have now been filled with specimens from this collection.

Fifteen label stands specially designed to secure stability and yet present a neat and unobtrusive appearance, have been provided for the uncased skeletons and other floor mounts in this hall. These stands bring the labels to the height of the eye of the visitor and admit of adjustment to the angle most favorable for reading.

A collection illustrating minerals that can be employed in crystal sets for radio communication was prepared and installed in Skiff Hall.

An attractive addition to the exhibit illustrating the uses of petroleum products is the candle collection. This is installed on a single screen which occupies half of a large case. Placed in the midst of the dull-colored petroleum and coal exhibits it adds a needed touch of color to this part of the hall.

To illustrate the ornamental uses of gypsum, a figure of considerable artistic merit was carved on a small block of alabaster, in such a way as to show both the rough stone and the finished figure.

Work on the model of a cement plant was discontinued for the larger part of the year. The modelling was resumed during the late fall and the model is now complete except for some minor details, painting and some work that can be done only after the model is placed in its exhibition case.

Four series of glass models illustrating the crystal form and colors of gem minerals have been remounted and relabelled. The replicas of famous diamonds in Higinbotham Hall have also received new labels. A tablet of gold nuggets from California, a gift from Mr. William J. Chalmers, has been prepared and is now exhibited in the same Hall.

Further installation was confined to adding new specimens to the present collections and to numerous minor changes in arrangement of material, labels and cases.

A modern still for distilling water has replaced one of antiquated type in the chemical laboratory. This not only provides the water required in the laboratory but also that for the stereopticons in Simpson theatre and for several of the work-rooms. Room 110 has been converted to a preparation room for the Borden collection. In it racks have been erected for all of the departmental storage trays.

Sixty-six additional trays have been provided for the storage of the Borden collection.

In the chemical laboratory the principal work has been confined to the transfer from the original packages to exhibition bottles and jars of several hundred petroleum, greases and waxes, a task that would have been difficult but for the excellent laboratory equipment. A number of problems connected with the maintenance of the building have been solved by laboratory research. These include some fuel investigations, and questions concerning the harmful character of a number of marble cleaning compounds. Identification of minerals received from Museum expeditions has also been carried forward during the year.

Mr. F. C. Richardson of the Geological department of the University of Chicago has made a detailed study of the Museum asbestos collections.

Text for two guide leaflets, one on amber and one on meteorites, were prepared by the Curator and published during the year.

ZOOLOGY.—Preparation of new material for exhibition purposes has steadily advanced and a considerable quantity is on hand, awaiting installation. The animals for the Olympic Elk group, begun some time ago, have been finished to the point of requiring only a few final touches. A case of bears, showing the color variation in the Black Bear group and including specimens of the Black, the Cinnamon, and Glacier Bears is practically ready for exhibition. A similar collection of the larger American cats, as the Cougar, Jaguar, Ocelot, Lynx, Bobcat, etc., is also in an advanced stage. A handsome specimen of the African Leopard was mounted and installed in the hall devoted to the systematic series of mammals; and two small South American monkeys were also mounted for this series. The skin of a hippopotamus, received during the year, was preserved and carefully prepared for mounting.

A collection of American raptorial birds, eagles, hawks and falcons has been prepared, the birds being mounted from fresh material or from thoroughly remodeled specimens and placed on appropriate natural stands instead of the perfunctory T-perches and wooden blocks used heretofore. This collection is designed to occupy an entire case and will be the first of a completely reorganized systematic and geographic exhibit of birds. New descriptive labels have been prepared for each species and a special case label has been devised to fit the case. Progress has been made also in mounting a series of American woodpeckers

and material for other series has been prepared so that it will be available for future work. The exhibit of Birds of Paradise in Stanley Field Hall was improved by the addition of a Blue Bird of Paradise, one of the rarest and most beautiful of its family. The other birds in the case were renovated, and the entire installation modified by the reconstruction of the base.

Preparation of material in the section of reptiles and amphibians advanced rapidly, and notable success has attended the application of the celluloid process to the reproduction of such large reptiles as crocodiles. The eight and a half foot specimen, the first of three for a proposed habitat group of the American Crocodile, sets a new standard for work of this kind and is so life-like as to be almost beyond criticism. A second model of the very different Belize Crocodile, rediscovered by the Museum's expedition to Central America, has also been completed. A large amount of work has been done on the two remaining molds of crocodiles, and these, therefore, can be finished at an early date in 1924. In furtherance of the plan to exhibit a case of the poisonous snakes of North America several molds have been made, of which the most noteworthy are a green, a black-tailed, and a cane-brake rattlesnake.

In the Division of Fishes, one exhibition case was equipped with new labels, and on one side of the screen in this double case a new exhibition was installed, showing some of the fishes of the deeper parts of the sea. Where actual specimens were not available for reproduction, some of the rarer species have been shown by means of colored drawings in natural size, twelve such drawings having been prepared. Specimens of 37 fishes were completely prepared and colored, and 75 others have passed the preliminary stages.

The skeleton of the Sea Elephant was installed in Hall 17 during the month of January. New labels were printed and placed in frames, which were attached to special supports in front of the large skeletons exhibited on open stands. Among these were the skeletons of the Right Whale, Bottle-nose Whale, Walrus, Sea Elephant and Bison.

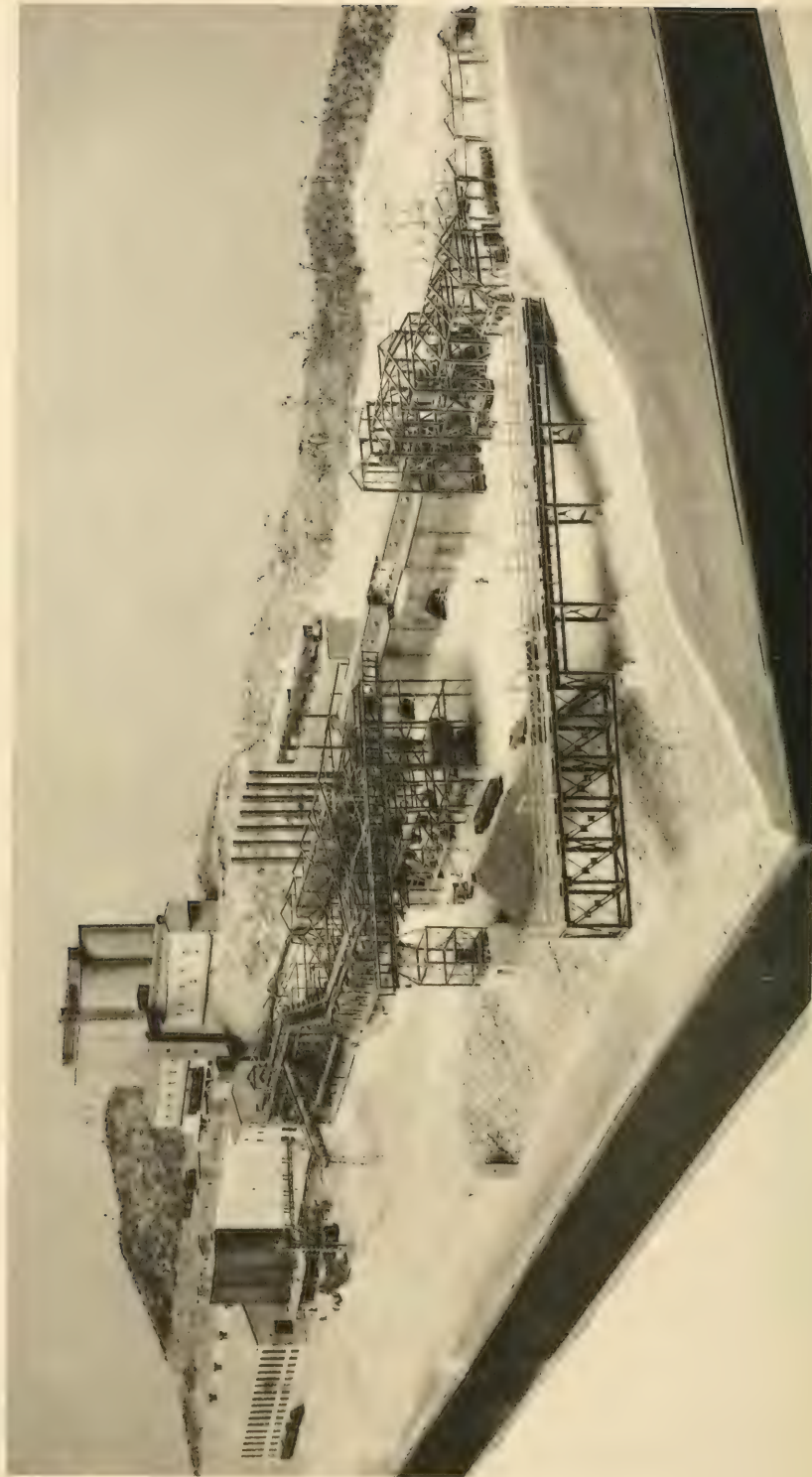
In the conchological exhibit, the shells in three A-cases were reinstalled and, by the elimination of duplicates, it was possible to condense them into one third the space they formerly occupied. In this manner, two cases became available for the insect exhibit. The work of selecting, naming and remounting a series of North American butterflies for exhibition was advanced as much as possible, with the result that this preparatory work was nearly completed.

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

The activities of the Department during the year have largely been devoted to the improvement of methods of installation, and to the preparation of material for additional cases. At the end of the year 1923, this Department had 770 cases available for loaning to the schools of Chicago. Several instructive cases of wild flowers growing in the Chicago region were prepared and are now ready for use in the schools. Considerable care was given to the methods of reproducing these flowers, as well as to the means of installing them so that they would be capable of withstanding damage from transporting them to the schools. Realism was added to the cases by the use of enlarged and colored photographs as backgrounds. Besides those cases ready for distribution, several cases are still in various stages of completion. A noteworthy and attractive improvement was made in the cases of several habitat-groups of birds. Instead of placing the enlarged, colored photographs, used as environmental backgrounds, flat against the backs of the cases, they were curved. This curving gives added length to the background and a greater perspective to it.

During the year several conferences were held with groups of principals from the public schools. As a result of these conferences a schedule of deliveries was adopted, which will enable the schools to have uninterrupted, daily use of the cases. The new schedule provides that each school shall receive two cases at the beginning of the school year. These two cases remain in the school for study for three weeks, and are replaced at the end of this period by two other cases. This procedure of distribution and collection, is maintained throughout the school year. This plan has been made possible by the steady increase in the number of cases. Under the abandoned system three cases were left at a school for three weeks' study but it was impossible to substitute others for them when they were collected. In carrying out the new schedule 648 cases are in circulation, an increase of 162 over the previous schedule. There are 326 schools on the schedule to receive cases, 323 of which are public schools.

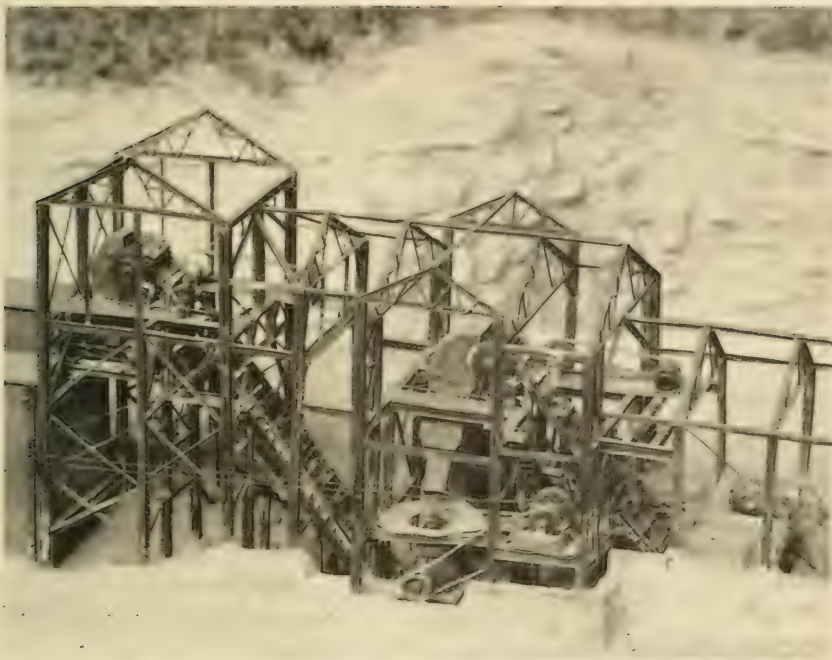
Numerous applications were made for the loan of cases to other than public schools. The Chicago Normal College requested that it be included in the regular schedule. This was done and the student teachers are given special instruction on the educational values of the cases. A similar request was made by the Michael Reese hospital and cases that would be of assistance in certain courses for student nurses were sent. Permission was given the Director of Visual Instruction of the Chicago Public Schools to make lantern slides and stereoscopic



MODEL OF A PLANT FOR THE MANUFACTURE OF PORTLAND CEMENT.

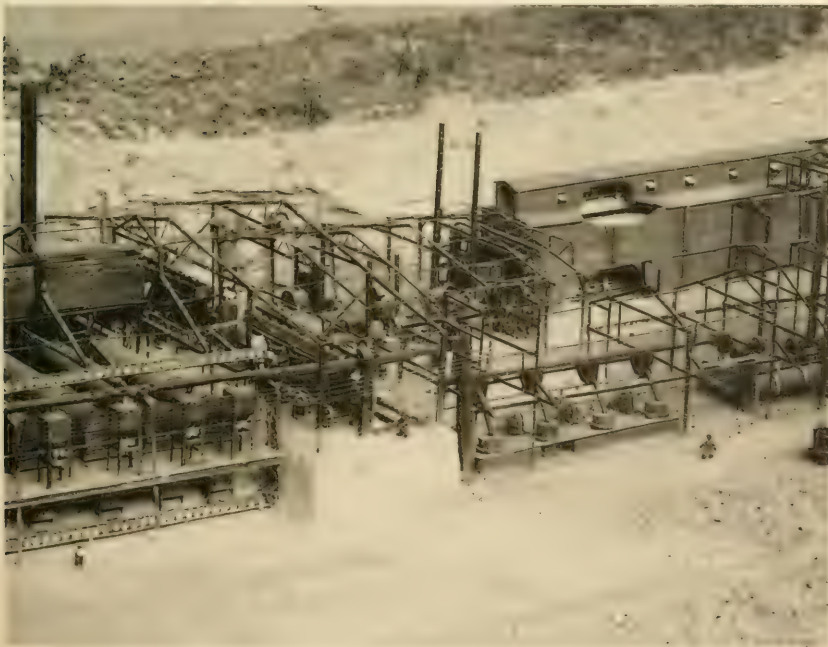
Size, $11\frac{1}{2}$ x $3\frac{1}{2}$ feet.

CONSTRUCTED BY H. W. NICHOLS AND VALERIE LEGAULT.



DETAIL, (CRUSHER HOUSE), OF MODEL OF A PLANT FOR THE
MANUFACTURE OF PORTLAND CEMENT.

Two fifths actual size.



DETAIL, (RAW GRINDING MILL), OF MODEL OF A PLANT FOR THE
MANUFACTURE OF PORTLAND CEMENT.

One fourth actual size.

pictures of all of the cases of this Department. These slides and pictures will be used in the classrooms in conjunction with the regular study of the cases.

Various institutions throughout the country have commended the work of this Department and requested the loan of cases. The Resources Museum Commission of Missouri asked for several cases to be shown the state legislature, in connection with school exhibits from various institutions. In a letter to the Museum, the Commission wrote, "your cases make by far the most attractive natural history exhibits received."

Eight cases were sent on request to the Peoria County School Teachers' Institute, for exhibition at its regular meeting. Four were sent to Nashville to assist in establishing a children's museum of Natural History. The Louisville Library requested and was granted the loan of a case. The Progressive Educational Association exhibited a case of this Department at its annual meeting held at the Drake Hotel. Two cases were loaned to the San Antonio Museum. The U. S. Department of Agriculture selected sixteen cases and asked that they be sent there for inspection and discussion with the view of adopting similar types of cases for its extension work. While the cases were in Washington several of them were requested by and loaned to public schools there and other cases were loaned to the University of Maryland. Ten cases were on view at the Art Institute as part of the annual exhibition of the Illinois Chapter of the Wild Flowers Preservation Society of America. The Royal Ontario Museum of Zoology requested and received a case for examination. Seventy-five new cases were ordered and received by the Department.

GUIDE-LECTURER.—The chief activities of the guide-lecturer during the past year were centered on the plan to bring the Museum into closer touch with school children and teachers. Through consultation with the teachers, these lectures were closely correlated with the work done in the classroom. The increase in the attendance at these lectures has proven that this work is of practical importance. There were given to school classes 149 lectures, with a total attendance of 5,683 school children. Besides these lectures, the Museum has been the host, through the services of the guide-lecturer, to numerous clubs, conventions, societies and visitors. Over 80 lectures on the Museum exhibits were given to 519 general visitors and 58 lectures were given to clubs and conventions, with an attendance of 2,280. The total number of lecture tours given during the year was increased to 294 and the attendance approximately 9,000.

PUBLICITY.—It had become increasingly evident to the Museum management that the location, visiting hours, and free days, of the Museum were not sufficiently clear and definite in the minds of the public. There were three major causes that had led to this condition. First, the fact that the change from its old location in Jackson Park to its present site in Grant Park was accomplished immediately following the World War, and the public interest was therefore not centered upon this change. Second, the new Museum was built on newly made land, the existence and location of this new park being practically unknown in the outlying districts. Third, the approaches to the Museum were necessarily delayed, awaiting the completion of this outer park. This delay led to a confusion as to the proper approaches to the institution. To give more thorough information to the public concerning the location and approaches, a campaign of public information was started.

The work which was begun in May was confined for the most part to posters indicating the location and approaches to the Museum. These posters are all classed as an indirect type of public notice, since both the name of the Museum and that of the transportation company contributing the advertising space, have appeared on the placards. In placing these direction posters the Museum is greatly indebted to the co-operation of the transportation companies, such as the Surface Lines, Elevated and Suburban Railroad Service. During the year a total of 11,880 posters were distributed to the transportation agencies of which 4,350 were printed outside of the Museum at the expense of these companies, while the remaining 7,530 were printed by the Museum.

During the spring and summer months the correct name and location of the Museum was inserted in the records of six road maps and direction folders. Illustrated folders, which contained information as to location, motor roads, visiting hours, etc., were furnished the Chicago Motor Club and the Illinois Motor Club. Taxi cab companies included the location and history of the Museum in their school instructions to new drivers.

In order to explain the economic value of the Museum exhibits and bring the Museum into a closer contact with the people connected with these economic activities, 12 articles were edited by prominent trade journals, explaining this phase of Museum work. Articles on the exhibits were also published in eight of the house organs of the largest local concerns.

Two news reels were made, Pathe on the Stanley Field plant reproduction process, and International showing the children entering the Museum for one of the fall series of entertainments.

Advance notices were sent to newspapers, public schools, universities, libraries and similar institutions, announcing the fall series of lectures and entertainments.

The newspaper clippings for the year totaled 2,225. There were ten major stories on the expeditions and Museum work. This averaged one article a month that received a good national circulation.

PRINTING.—Since all of the printing is done in the Museum, the output of the section of printing has been greatly increased. The varied interests of the departments call for a large amount of printing of a diversified nature, and the work is now being performed with considerable economy to the Institution and a most satisfying saving of time to the departments. The total number of impressions made indicates the unusually heavy demand on this section. Of the regular series of publications 5,559 copies were printed and bound, and 58,771 leaflets, guides and manuals were printed and bound during the year. The number of labels and other impressions printed follows:

	Exhibition Labels	Other Impressions
Anthropology.....	4,777	12,600
Botany.....	1,041	23,757
Geology.....	1,480	3,015
Zoology.....	1,617	7,660
Harris Extension.....	377	908
General.....	594	260,237
Geographic Society.....	24,400
Total.....	9,686	332,577

Several noteworthy additions were made to the printing equipment during the year. To facilitate the making up of type and illustrated pages, a complete assortment of steel furniture was installed. A most desirable acquisition was a 14 x 22 inch Universal Press with electric motor equipment. A combination cabinet table for ink, rollers and chases for the Universal press, and two large tables for the bindery and for storing temporarily type pages were also provided.

PHOTOGRAPHY AND ILLUSTRATION:—Through the generosity of Mr. George D. Pratt of Brooklyn, N. Y., and Mr. E. A. McIlhenny of Chicago, who contributed a number of interesting moving picture reels to the Museum, a Moving Picture Film Library was inaugurated. While the work of the Section of Photography has been of a routine nature, the large amount of prints furnished by this section is indicative of the extent of the researches of the museum. The section is fortunate in having an unusually well equipped photographic plant.

The 20,000 lantern slides that were formally distributed among the departments of the museum, have now been brought under one central system of classification and placed in the section of Photography ready for cataloguing. The following tabulation sets forth the work performed in this section during the past year:

	Number of Lantern Slides Made	Number of Negatives Made	Number of Prints Made	Number of Negatives Developed for Field Expeditions
General.....	...	45	1,893	...
Anthropology.....	105	331	1,546	...
Botany.....	...	152	1,873	...
Geology.....	...	66	484	66
Zoology.....	403	43	2,506	222
Harris Extension.....	...	15	249	36
Sale.....	18	...	440	...
Gift.....	...	28	165	...
Totals.....	526	680	9,156	324

PHOTOGRAVURES.—The great number of publications and leaflets printed during the year has meant also a decided advance in the output of this section. The number of photogravures printed during the year for various purposes is condensed into the following table:

Publications.....	87,000
Leaflets.....	159,000
Postal Cards.....	8,000
Membership Certificate Headings.....	1,500
Total.....	255,500

ATTENDANCE: It is gratifying to note the increase in attendance during the past year, indicating a steady growth of popular interest in the museum. A total of 496,767 persons visited the museum, of which 414,944 were admitted on the free days, while 81,823 attended on the regular pay days. It is also encouraging to note an increase in the number of school children who have attended the museum during the year.

Herewith are also submitted financial statements, lists of accessions, names of members, etc., etc.

D. C. DAVIES, Director.

ATTENDANCE STATISTICS

FROM JANUARY 1, 1923 TO DECEMBER 31, 1923.

Total Attendance.....	496,767
Paid Attendance.....	81,823
Free Admissions on Pay Days:	
School Children.....	23,369
Students.....	13,860
Teachers.....	1,240
Special.....	196
Admissions on Free Days:	
Thursdays.....	62,199
Saturdays.....	101,705
Sundays.....	212,375

Highest Attendance on any day (October 6, 1923).....	8,166
Lowest Attendance on any day (February 14, 1923).....	123
Highest Paid Attendance (September 3, 1923).....	3,927
Average Daily Admissions.....	1,361
Average Paid Admissions.....	439
Guides sold.....	17,206
Articles checked.....	15,919
Picture Postal Cards sold.....	113,457

GENERAL FUND

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

For the Year Ending December 31, 1923

Balance December 31, 1922.....\$ 34,673.78

RECEIPTS

Income—Endowment, General and Door Receipts.....	\$227,897.90	
South Park Commissioners.....	114,918.71	
Sundry Receipts.....	11,905.61	
Loans Repaid.....	29,450.48	
Memberships.....	14,725.00	
Contributions.....	180,038.01	
Sale of Securities.....	139,386.00	\$718,321.71
		<u>\$752,995.49</u>

DISBURSEMENTS

Operating Expenses.....	\$352,745.51	
Expeditions.....	63,335.02	
Collections Purchased.....	8,159.42	
Furniture and Fixtures.....	10,884.17	
Expenditures on Building and Approaches.....	64,286.42	
Securities Purchased.....	198,333.75	
	<u>\$697,744.29</u>	
Transferred to Sinking Funds.....	9,600.00	\$707,344.29
		<u>\$ 45,651.20</u>
Cash Balance December 31, 1923.....		

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

Statement of Income and Expenses for the Year 1923

Interest and Dividends on Investments.....	\$ 14,884.18
Operating Expenses.....	13,380.86
	<u>\$ 1,503.32</u>
Deduction from Income (Depreciation of Automobile Delivery Car)....	602.24
	<u>\$ 901.08</u>
Balance transferred to Surplus.....	

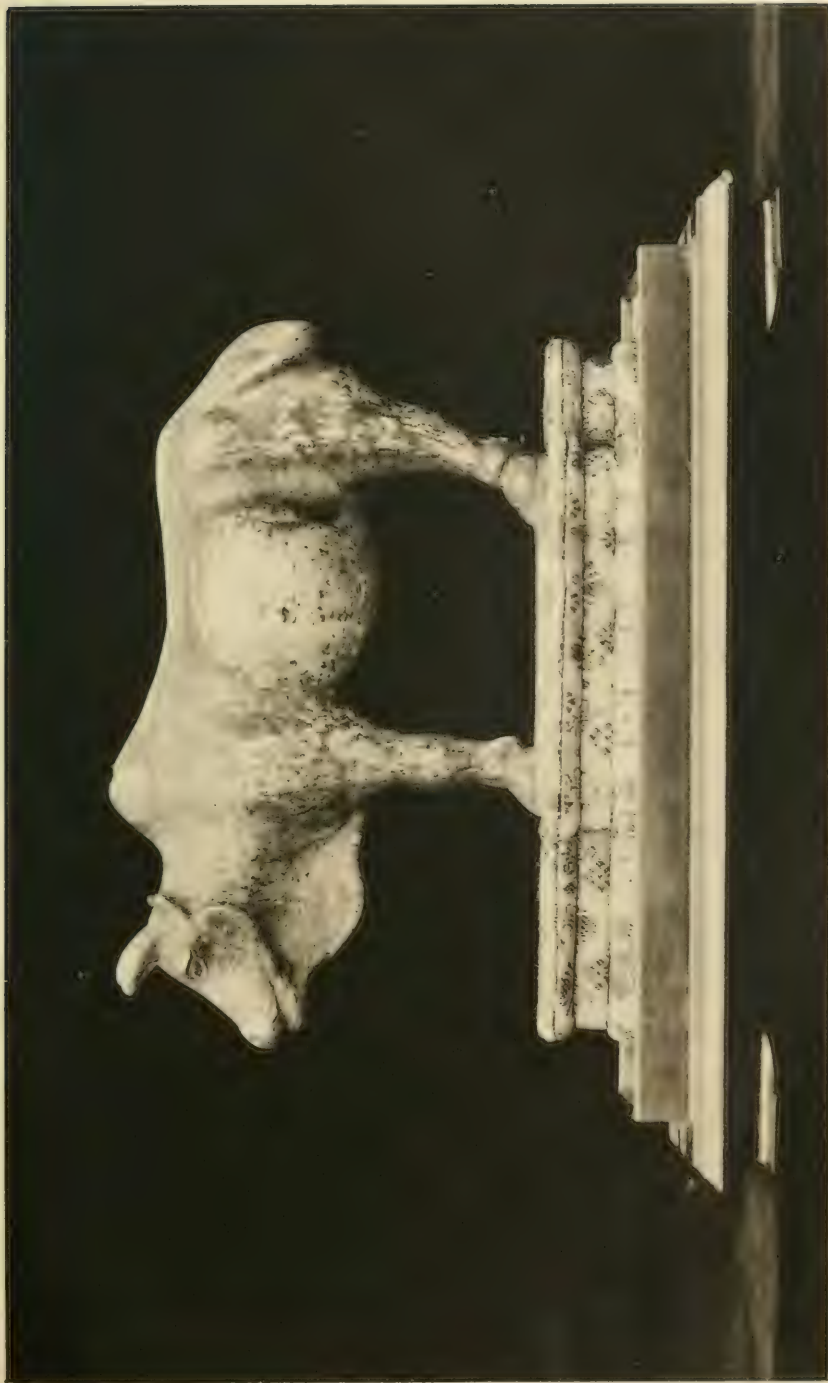


FIGURE OF WATER BUFFALO CAST OF SOLID SILVER, CHINA, SIXTH CENTURY A.D.

CAPT. MARSHALL FIELD EXPEDITION TO CHINA, 1923.

Height 4 inches, length 6 inches.

ACCESSIONS

DEPARTMENT OF ANTHROPOLOGY

ABBOTT, THOMAS R., Peking, China.

- 1 jade imperial emblem of the Sung period, 1 green-glazed dish of the Ming period, 1 fragmentary bowl of the Yüan period, 1 snuff bottle, 1 Ting bowl of the Sung period, 1 jade ink slab, samples of incense—China (gift).

ALLING, CHARLES, Chicago.

- 1 color print (surimono) by Kunisada—Japan (gift).

ANDERSEN, MRS. C. M., Chicago

- 1 eider-down lined woman's jacket, 1 pair of woman's short sealskin trousers, 1 pair of woman's inner sealskin boots, 1 pair of woman's red outer boots—Eskimo, Good Hope, Greenland (gift).

ARTHUR, J. J., Topeka, Kansas.

- 2 prehistoric flint scrapers—Morris County, Kansas (gift).

AYER, EDWARD E., Chicago.

- 190 pewter plates, tankards, jugs, tureens, candlesticks, and other utensils—China, England, Germany, Austria (gift).

- 4 pewter objects: plate, guild cup, flask, and ewer, of the 18th and 19th centuries—Germany (gift).

- 11 pewter plates, 1 pewter jug—England and France (gift).

Wrappings of mummy—Egypt (gift).

- 72 pewter objects—China (gift).

- 5 pewter objects—Japan (gift).

- 1 Chinese pewter object, 1 pewter tankard in the shape of round tower with turret—China and Germany (gift).

- 8 pewter objects: 1 censer, 2 flower vases, 2 candlesticks, 2 teapots, and 1 figure of water buffalo with boy astride—China (gift).

- 1 Chinese pewter candelabrum, 1 buckskin dance skirt—China and Northwest California (gift).

- 9 pewter objects: 2 plates, 2 trays, 1 teapot, 4 mugs—Europe (gift).

- 18 Ushebti figures—Ancient Egypt (gift).

- 2 pewter bowls and 1 pair of pewter candlesticks—China (gift).

- New Year's gift in shape of Twin Genii of Harmony and Union, of pewter—China (gift).

- 18 pewter objects: teapots, winepots, lamps and figures—China (gift).

BABCOCK, F. R., Nice, France.

- 3 boomerangs, 2 painted with native red ochre—Central Australia (gift).

BAHR, PETER J., Shanghai, China.

- 131 objects: 1 brick tea for Mongol market, 1 Ming dynasty paper note, 8 Hien-fung paper notes, 11 bank drafts, 1 chain mail, 5 clay figures, 2 jade boulders, 5 iron implements, 81 bone, bronze and stone implements and beads, 16 small jades of the Han period—China (gift).

BECK, NORMAN, Chicago.

- 3 painted miniature masks of carved wood—Japan (gift).

BLAIR, WATSON F., Chicago.

- Large chipped obsidian blade—Yurok, Weitspekan, Humboldt County, California (gift).

CHALMERS, W. J., Chicago.

- 18 bows, arrows, walking sticks—Southwest Congo, Africa.

CLARK, ALBERT B., La Porte, Indiana.

- 3 baskets, 10 mats, 1 hat, 1 carved ornament, 2 gorgets, 2 shaman's rattles, 3 small masks, 1 small box, 1 paint brush—Queen Charlotte Islands and Northwest Coast (gift).

CORONA MUNDI, New York.

- 50 flint implements of the neolithic period—Lake Piro, Novgorod District, Russia (exchange).

CORY, MRS. CHARLES B., Chicago.

- 1 bamboo quiver containing blow-gun arrow—Borneo (gift).

DA YUI HENG TOBACCO COMPANY, Shanghai, China.

- 10 samples of tobacco leaves in bundles—Kiangsi and Chekiang Provinces, China (gift).

FIELD, MARSHALL, AND COMPANY, Chicago.

- 4 painted Tientsin clay figures—China (gift).

FIELD MUSEUM OF NATURAL HISTORY.

Collected by B. Laufer.—Capt. Marshall Field Expedition to China: About 2,000 specimens of pottery, jade and other stone carvings, bronze, iron, ivory, paintings, costumes, etc.—China.

Collected by W. H. Osgood.—Capt. Marshall Field South American Expedition:

- 4 prehistoric stone celts and 1 club head, 1 long implement point. Quellon, Chiloé Island, Chile.

Collected by J. T. Zimmer.—Capt. Marshall Field South American Expedition:

- 9 pottery fragments: 6 knob heads, 1 loop handle, and two painted sherds—Huanuco Viejo, Peru.

Collected by Fay-Cooper Cole.—Arthur B. Jones Expedition to Malaysia:

- 2400 objects: clothing, textiles, embroideries, jewelry, brass, silver and wooden bowls and dishes, combs, baskets, bags, weapons, fish traps, agricultural and musical instruments, shadow-play figures, etc.—Federated Malay States, Sumatra, Nias, Java, Borneo.

Purchases:

- 21 specimens of Greek antiquities: 1 marble hand from child's statue, 1 copper hand, 1 glass tear bottle, 3 clay lamps, 1 copper ladle, 1 bronze figure, 1 small painted vase, 7 clay figurines, etc.—Miletos, southwest coast of Asia Minor, from D. G. Peponis, Cincinnati, Ohio.

60 samples of Indian textiles mounted in book, dated 1795—North-east Bolivia, South America, from Carlos Doggenweiler, Santiago, Chile.

- 3 decorated ivory arm rings, 1 arm ring of brass wire, 2 daggers worn on lower left arm, 2 pairs of men's sandals, 1 pair of woman's slippers—Upper Nigeria, Africa, from Alexander Inglis, Chicago.

- 1 woman's silk appliqué skirt, 1 woman's silk appliqué shawl, 1 woman's calico waist with silk appliqué, 1 woven yarn bag, 1 woven basswood fiber bag, 1 tomahawk, 2 pairs of woman's leggings, 5 pairs of moccasins—Menomini, Keshena, Wisconsin, from A. Skinner, Milwaukee, Wisconsin.

- 5 masks of Australian aborigines—from E. Eldridge, Adelaide, South Australia.

- 1 mountain-sheep wool blanket—Puget Sound, Washington (Coast Salish), from D. Francis, Victoria, B. C.

GOOKIN, F. W. Chicago.

Set of ten paintings: moral illustrations of the transience of human life—Japan (gift).

GROSSMAN, E. B., Chicago.

- 13 pieces of armor and wapons—India (gift).

HEALY, AUGUSTINE, Chicago.

Lion mane headdress—Masai, British East Africa (gift).

HEKTOEN, PROFESSOR LUDWIG, Chicago.

- 1 long sword—*katana*—of the 16th century—Japan (gift).

HOLLISTER, FRANKLIN, Chicago.

- 1 stone figure of dark lava rock—Probably Aztec, Mexico City, Mexico (gift).

HOLMQUIST, GUSTAV, Chicago.

- 25 objects: boat models, dishes, pipes, rattles, baskets, hooks, hat, and dagger—Tlingit and Yukon Athabaskan, Alaska (gift)

HORNBAKER, W. R., Lakeland, Florida.

- 54 prehistoric flint projectile points and knives—Ripley Township, Montgomery County, Indiana

- 1 buffalo skull (fragmentary)—from the sands of Saskatchewan River, 12 miles above Edmonton, Canada (gift).
- KEEP, CHAUNCEY, Chicago.
1 unusually large chipped obsidian blade—Yurok, Weitspekan, Humboldt County, California (gift).
- KWEN VOK-TSOO, Shanghai, China.
1 album of photographs showing the actor Mei Lan-fang in different roles, 1 painting of a Peking dog by Tsiao Ping-chen—China (gift).
- MATTESON, RICHARD.
1 silk cap lined with red felt and trimmed with fur—Korea (gift).
- McNUTT, FRED C., Youngstown, Ohio.
About 225 specimens of pre-Columbian pottery, gourd vessels, wooden vessels and bells, objects of bone, wood and shell, bows, arrows in quivers, pack straps, sandals, turquoise necklace, and 12 copper pieces including an axe, stone-headed club, etc.—Calama, Antofagasta, Chile (gift).
- MELCHIOR, J. E., Shanghai, China.
Prehistoric pottery water-jar—Hankow, China (gift).
- MILLER, PAUL, Chicago.
Prehistoric steatite vessel—50 miles south of Bitter Creek Station, southwest Wyoming (exchange).
- PUBLIC MUSEUM OF MILWAUKEE, Milwaukee, Wisconsin.
2 Fox medicine bundles, 3 Fox medicine otters, 1 Fox medicine bag of squirrel skin, 1 Fox appliqué woman's skirt—Sauk Indians, Tama Reservation, Iowa (exchange).
- ROBERTS, W. H., Chicago.
27 Eskimo objects: bow-drill, knife, sinkers, adzes, and ivory carvings—Nome, Alaska (gift).
- SARGENT, HOMER E., Pasadena, California.
1 Navaho blanket, 1 man's headband, 1 ceremonial headdress—Navaho and Hupa, United States (gift).
- 26 baskets and 1 basket mortar—California, Alaska, and Abyssinia (gift).
- SKINNER, A., Milwaukee, Wisconsin.
1 Winnebago woman's robe, 3 Iroquois pipes of a late period—Iroquois and Winnebago, New York and Wisconsin (exchange).
- STREHLNEEK, E. A., Shanghai, China.
7 pottery jars and vases of Han, T'ang, and Sung periods, 1 Pandean pipe—China (gift).
- UNIVERSITY OF CHICAGO, Chicago.
3000 objects Mexican archeology and 400 southwest archeology through M. A. Ryerson, 148 specimens of physical anthropology, 90 casts and reproductions, 35 objects from Swiss Lakes, 70 pieces of Peruvian archeology and ethnology, 6 objects of African ethnology, 80 miscellaneous stone implements, and a few modern Chinese, Japanese, and Korean articles of clothing—Mexico, Southwest United States, Switzerland, Peru, Africa, China, Japan, and Korea (gift).
- WANNIECK, L., Paris, France.
13 small bronze fragments of the T'sin period (3rd century B. C.), 34 pottery fragments from buried cities of southern Mongolia—China (gift).
- WARD, MRS. D. M.
Modern pottery vase—Pueblo, United States (gift).

DEPARTMENT OF BOTANY

- AMERICAN BALSAM CO., Long Island City, New York.
1 economic specimen (gift).
- BARTHOLOMEW, ELAM, Stockton, Kansas.
2 herbarium specimens (gift).
- BRITISH MUSEUM OF NATURAL HISTORY, London, England.
795 herbarium specimens (exchange).
- BRITTON, N. L., New York City.
1 herbarium specimen (gift).

- DE SELM, A. W., Kankakee, Illinois.
25 herbarium specimens (gift).
- DREISBACH, ROBERT R., Philadelphia, Pennsylvania.
555 herbarium specimens (exchange).
- FIELD MUSEUM OF NATURAL HISTORY.
Collected by G. S. Bryan—Capt. Marshall Field Peruvian Expedition:
750 cryptogamic specimens.
1500 duplicates for exchange.
Collected by J. F. Macbride—Capt. Marshall Field Peruvian Expedition:
100 economic and exhibition specimens.
3500 dried plants.
11000 duplicates for exchange.
Purchases:
444 herbarium specimens—Capt. Marshall Field 1923 Fund.
2593 herbarium specimens.
1 economic specimen.
Stanley Field Laboratory:
42 models and reproductions of plants.
Stanley Field Guiana Expedition, 1922:
18 economic specimens.
Transfer:
3 economic specimens from Harris Extension.
- FULLER, GEORGE D., University of Chicago.
153 herbarium specimens (gift).
- HEDDLE, JOHN R., Madison, Wisconsin.
218 herbarium specimens (gift).
- HIRSCHY, N. C., Berea, Kentucky.
1 herbarium specimen (gift).
- KAWAGOE, S., Kogoshima, Japan.
1 economic specimen (gift).
- KAWAMURA, S., Tokyo, Japan.
1 economic specimen (gift).
- KING, MISS ANNA, Chicago.
5 herbarium specimens (gift).
- KNOPF, EZRA C., Avalon, Santa Catalina, California.
4 herbarium specimens (gift).
- LA VARRE, W. J. AND LANG, H., New York City.
200 herbarium specimens (gift).
- MERRILL, E. D., Manila, Philippine Islands.
1 herbarium specimen (gift).
- MINER LABORATORIES, Chicago.
1 economic specimen (gift).
- MULFORD AMAZONIAN EXPEDITION, H. H. Rusby, New York City.
135 herbarium specimens (gift).
10 economic specimens (gift).
- NEW YORK BOTANICAL GARDEN, New York City.
62 herbarium specimens (exchange).
- PATTEN, MISS CORA M., Chicago.
84 herbarium specimens (gift).
- PAYSON, E. B., Laramie, Wyoming.
10 herbarium specimens (gift).
- PERRY, GEORGE ELLIOT, Chicago.
1 economic specimen (gift).
- PRAY, LEON L., Chicago.
1 economic specimen (gift).
- REES, NAT. S., Chicago.
1 economic specimen (gift).
- ROOD, MRS. M. R.
12 economic specimens (gift).
- ROYAL BOTANIC GARDENS, Kew, England.
405 herbarium specimens (exchange).
- SCHALLERT, P. O., Winston-Salem, North Carolina.
162 herbarium specimens (exchange).
- SHAFTEE, LOLA M., Chicago.
20 herbarium specimens (gift).
- SHERFF, EARL E., Chicago.
49 herbarium specimens (gift).
- U. S. NATIONAL HERBARIUM, Washington, D. C.
690 herbarium specimens (exchange).
- VISCOSE COMPANY, THE, Marcus Hook, Pennsylvania.
3 economic specimens (gift).
- WEED, ALFRED C., Chicago.
1 economic specimen (gift).
- WILSON, PERCY, New York City.
2 herbarium specimens (gift).
- ZIMMER, JOHN T., Chicago.
1 herbarium specimen (gift).
- ZOBEY, JOSEPH, Chicago.
1 herbarium specimen (gift).

DEPARTMENT OF GEOLOGY

- ARMSTRONG, H. M., Grand Junction, Colorado.
3 specimens carnotite—Polar Butte, Utah (gift).
- ASBESTOS CORPORATION OF CANADA, LTD., Quebec, Canada.
6 specimens asbestos and asbestos product—Quebec, Canada (gift).
- BEBB, DR. WILLIAM, Chicago.
12 specimens fossil bird skulls—La Brea Beds, Hollywood, California (gift).
- BUCKSTAFF, RALPH N., Oshkosh, Wisconsin.
1 specimen iron meteorite—Pitts, Georgia (gift).
- BULF, VALENTINE, Chicago.
1 specimen fossil crinoid (gift).
- CARD, GEORGE W., Sydney, New South Wales.
1 specimen meteorite—Warialda, New South Wales (gift).
- CHALMERS, WILLIAM J., Chicago.
1 specimen quartz crystal with chlorite inclusion (gift).
2 specimens silver buttons—California (gift).
4 specimens minerals—California (gift).
29 specimens gold nuggets and grains—California (gift).
48 specimens gems and choice minerals—South America (gift).
- CLARK, WALTER C., Vicksburg, Mississippi.
130 specimens fossils—Mississippi (exchange).
- COLLINS, W. H., Chicago.
5 specimens minerals and rocks—Loughbro, Ontario (gift).
- CRAWFORD, MRS. W. L., Dallas, Texas.
1 plastron of fossil turtle—Dallas, Texas (gift).
- DEPARTMENT OF IMMIGRATION, Pierre, South Dakota.
39 specimens minerals and ores—South Dakota (gift).
- DOUGLAS, WAYNE E., Chicago AND E. F. WALL, JR., Elizabethtown, Illinois.
16 specimens fluorite—Hardin County, Illinois (gift).
- DOWD, QUINCY L., Lombard, Illinois.
1 specimen trilobite head—Lombard, Illinois (gift).
- EDE, J. A., La Salle, Illinois.
1 specimen tschermigite—Wamsutter, Wyoming (gift).
- EISENDRATH, MRS. D. N., Chicago.
82 specimens minerals (gift).
- ELLIS, MRS. WALTER C., Sulphur Rock, Arkansas.
4 specimens fossil fish—Sulphur Rock, Arkansas (gift).
- ELWELL, W. J., Danbury, Connecticut.
8 specimens minerals—Connecticut (gift).
- FIELD MUSEUM OF NATURAL HISTORY.
Collected by O. C. Farrington—Capt. Marshall Field Brazilian Expedition:
323 specimens gems, minerals and ores—Brazil, South America.
Collected by H. W. Nichols:
1 specimen tourmaline and quartz vein—Deloro, Porcupine District, Ontario, Canada.
Collected by C. C. Sanborn—Capt. Marshall Field Chilean Expedition 1922-23:
26 specimens fossils and 4 specimens conglomerate and sandstone—Paiguano, Province of Coquimbo, Chile, South America.
- Purchases:
1 specimen troilite—Del Monte County, California.
1 skull of Hipparrion gracile—Isle of Samos, Greece.
5 individual stone meteorites—Ness County, Kansas.
- FLOWER, W. A., Halfway, Oregon.
9 specimens gold and silver ores—Seven Devils District, Idaho (gift).
- GOURLEY, W. J., Chicago.
1 specimen rock weathering—Near Wauconda, Lake County, Illinois (gift).

- GUNSAULUS, MRS. F. W., Chicago.
1 specimen fossil shell—Gonzales, California (gift).
- HALVORSEN, E. E., Santa Barbara, California.
Collection of invertebrate fossils—San Pedro, California (gift).
- HEIKES, VICTOR C., U. S. Geological Survey, Salt Lake City, Utah.
2 specimens minerals—Manhattan, Nevada (exchange).
2 specimens tillite—Manhattan, Nevada (exchange).
1 specimen microlite—Amelia Court House, Virginia (exchange).
- HORNBAKER, W. R., Lakeland, Florida.
21 specimens fossils—Illinois and Indiana (gift).
- JORDAN, MRS. SCOTT, Chicago.
16 specimens minerals (gift).
32 specimens fossils (gift).
- LEAN, F. J., Calumet, Michigan.
5 specimens minerals—Michigan (gift).
- LINKEY, HARRY, Chicago.
16 specimens minerals—Yellowstone National Park, Wyoming (gift).
- LIVERSIDGE, PROF. A., Surrey, England.
2 casts of Bingera meteorite—Australia (gift).
- MORONEY, JOHN J., Chicago.
1 specimen diaspore (gift).
- MUMMS, CHESTER, Arkadelphia, Arkansas.
1 specimen manganese ore—Arkadelphia, Arkansas (gift).
- MURRAY, HUGH, Chicago.
1 specimen septarium—Kibbie, Michigan (gift).
- NEUMANN, MISS FANNYE M., Chicago.
50 specimens minerals—Lake Superior Region and Blue Ridge, North Carolina (gift).
- OFFER, W. C., South Porcupine, Ontario.
1 specimen silver ore—Carmen, near Porcupine, Ontario (gift).
- RICHARDSON, S. A., Bonne Terre, Missouri.
1 limestone drill core—Jefferson County, Illinois (gift).
- ROBB, MRS. GEORGE S., Borden, Indiana.
The Borden Collection of invertebrate paleozoic fossils, approximately 30,000 specimens—Kentucky and Indiana (gift).
- ROOD, MRS. M. R., Milwaukee, Wisconsin.
262 specimens fossils, minerals and ores—mostly north Michigan (gift).
- ROTHSTEIN, H., Denver, Colorado.
1 specimen washegyite—Manhattan, Nevada (gift).
- RUHLING, F. E., Chicago.
1 fossil cephalopod—Omena, Grand Traverse Bay, Michigan (gift).
- SCHEILER, H. W., Lincoln, Illinois.
1 specimen concretion—Lincoln, Illinois (gift).
15 specimens fossil shells—Lincoln, Illinois (gift).
- SCHMANKE, EMIL C., Chicago.
5 specimens concretion—Cotter, Arkansas (gift).
- SCOTT, G. S., New York City, New York.
1 specimen orpiment and realgar—Manhattan, Nevada (exchange).
- STADLER, RAYMOND, Roberts, Illinois.
1 specimen marcasite concretion—Roberts, Illinois (gift).
- STANDARD OIL COMPANY (INDIANA), Chicago.
86 specimens fancy paraffine candles (gift).
8 specimens fancy paraffine candle holders (gift).
- STANFORD UNIVERSITY, California
1 slab fossil herring—Lompoc, California (gift).
- STUART, JAMES, San Francisco, California.
1 specimen cinnabar on pyrite (gift).
- THOMAS, R. K., Navajo, Arizona.
Collection of chromium minerals—Apache County, Arizona (gift).
- WOOD, F. E., Sioux City, Iowa.
6 microscopic slides of rocks and minerals (gift).
- WYSCH, ANTHONY J., Chicago.
2 fossil sharks' teeth—District of Arawina, Equatorial Africa (gift).



A CYCAD PLANT WITH ITS LARGE SEED-BEARING CONE.

One tenth actual size.

DEPARTMENT OF ZOOLOGY

AMERICAN MUSEUM OF NATURAL HISTORY, New York City.

378 birds—mainly South American (exchange).

2 birds—San Domingo (exchange).

BOOTH FISHERIES COMPANY, Chicago.

1 pickerel—(gift).

1 wall-eyed pike—(gift).

BRIGHT, J. C., Dubuque, Iowa.

1 fresh-water mussel—Specks Ferry, Iowa (gift).

CAHN, ALVIN R., Urbana, Illinois.

3 grass pike—Fox River, Wisconsin (gift).

CINCINNATI ZOOLOGICAL PARK ASSOCIATION, Cincinnati, Ohio.

1 hippopotamus skin and skeleton—Africa (gift).

COALE, HENRY K., Highland Park, Illinois.

3 birds—New South Wales, Australia (exchange).

COLBURN, FREDERICK S., Chicago.

1 fringe-eared oryx—Tanganyika Colony, Africa (gift).

CONOVER, H. B., Chicago.

1 crested grebe—Krugliner Sea, Germany (gift).

CRIMMINS, COL. M. L., Fort Bliss, Texas.

2 turtles, 5 snakes, 31 lizards—Fort Bliss (gift).

DAHLGREN, DR. B. E., Chicago.

178 dragonflies, ant-lions, mantis, grasshoppers, bugs, flies, beetles, moths, butterflies, bees, wasps—British Guiana (gift).

DOHMEN, U. A., Chicago.

2 butterflies—Chicago (gift).

EDE, GEORGE H., Austin, Illinois.

1 rough-legged hawk—Illinois (gift).

ENGELHARDT, GEORGE P., New York City.

3 tree frogs—Florida (gift).

FIELD MUSEUM OF NATURAL HISTORY.

Collected by F. C. Cole (Arthur B. Jones Malay-Archipelago Expedition):

2 Indian elephant skulls.

Collected by B. E. Dahlgren (Stanley Field Guiana Expedition):

1 agouti—British Guiana.

Collected by W. J. Gerhard:

21 grasshoppers, butterflies, moths, beetles, flies, bees, wasps and parasites—Northern Illinois and Indiana.

Collected by Edmund Heller (Capt. Marshall Field Peruvian Expedition):

58 birds—Brazil.

1741 mammals—Peru and Brazil.

2 beetles, 10 frogs and toads, 21 lizards, 16 snakes, 14 birds—Peru.

Collected by Ashley Hine:

1 moth—Mokence, Illinois.

57 birds—Indiana and Illinois.

Collected by S. E. Meek and S. F. Hildebrand:

290 crustaceans—Panama Canal Zone.

Collected by W. H. Osgood (Capt. Marshall Field Chilean Expedition):

7 insects, 4 shells—Chile and Argentina.

2 snakes, 1 lizard, 10 frogs, 42 birds, 195 mammals—Argentina.

Collected by W. H. Osgood and C. C. Sanborn (Capt. Marshall Field Chilean Expedition):

1 lizard, 11 frogs, 6 bird's eggs and nests, 377 birds, 1047 mammal skins, skulls and skeletons—Chile.

73 fishes—Chile and Argentina.

Collected by W. H. Osgood, C. C. Sanborn, and H. B. Conover (Capt. Marshall Field Chilean Expedition):

23 snakes, 32 lizards, 332 frogs and toads—Chile.

Collected by C. C. Sanborn (Capt. Marshall Field Chilean Expedition):

23 bugs and beetles, 3 snakes, 121 lizards, 151 frogs and toads, 7 bird's eggs and nest, 583 birds, 87 mammals—Chile.

Collected by K. P. Schmidt and W. J. Gerhard:

6 frogs, 7 toads, 3 lizards—Mineral Springs, Indiana.

Collected by K. P. Schmidt and L. L. Walters (Capt. Marshall Field Honduras Expedition):

250 fishes, 1275 amphibians and reptiles, 47 birds—Honduras and British Honduras.

369 leaches, snails, scorpions, centipedes, millipedes, ticks, spiders, dragonflies, roaches, bugs and beetles—Honduras and British Honduras.

Collected by K. P. Schmidt and L. L. Walters:

14 frogs, 72 salamanders—Chicago.

1 lizard, 7 toads; 8 salamanders—Northern Illinois and Northern Indiana.

Collected by Alfred C. Weed (Capt. Marshall Field Louisiana and Texas Expedition):

2000 fishes, 18 salamanders, 290 frogs and toads, 1 turtle, 61 snakes, 83 lizards—Louisiana.

8000 fishes, 302 amphibians and reptiles—Cameron County, Texas.

183 scorpions, centipedes, millipedes, spiders, dragonflies, bugs, beetles, moths and flies—Louisiana and Texas.

Collected by John T. Zimmer (Capt. Marshall Field Peruvian Expedition):

1492 birds, 140 mammal skins and skulls, 16 frogs and toads, 33 lizards, 19 climbing catfish, 2 insects—Peru.

Purchases:

129 birds—Argentina.

1 woodchuck—Arkansas.

44 birds—Austria, Norway, Canary Islands.

14 mammal skins and skulls, 600 dragonflies—Brazil.

4 turtles—Tanganyika Territory, East Africa.

7 birds—Dominican Republic.

202 birds—S. W. Ecuador.

1823 birds—Germany.

110 butterflies and moths—India.

1 lake trout—Michigan.

2 golden eagles—Nebraska.

321 fishes—Marion County, Florida.

2 butterflies, 2 moths—New Guinea.

1 red lynx—

25 birds—Shetland Islands, Cape Verde Islands, Azores.

14 birds—South America.

263 birds—South America and New Guinea.

32 salamanders, 26 frogs, 29 toads, 6 lizards, 48 snakes, 2 turtles—Mt. Pleasant, S. C.

6 salamanders, 31 toads, 1 lizard, 2 turtles—South Carolina.

30 turtles—Tennessee, Missouri.

10 birds—Uruguay.

300 snakes, lizards, frogs, 2 fishes—various localities.

1 black bear—

1 Pacific wolf fish—

1 red snapper—

1 flounder, 4 mackerels—

1 rattlesnake—Louisiana.

FIELD, STANLEY, Chicago.

1 bronze bust of gorilla by Akeley—(gift).

FREAR, A. EDWARD, Chicago.

6 bear skulls—Alaska (gift).

GUERET, E. N., Chicago.

1 roach—Chicago (gift).

GUILHUFE, F., Chicago.

1 bat—Chicago (gift).

HEALY, AUGUSTINE, Chicago.

1 rhinoceros skull and scalp—British East Africa (gift).

HELLMAYR, DR. C. E., Chicago.

134 butterflies and moths—Colorado (gift).

12 birds—São Paulo, Brazil (gift).

1 wood pewee—Tremont, Indiana (gift).

HEPP, FRANK, Berwick, Ohio.

3 beetles—Berwick, Ohio (gift).

HINE, ASHLEY, Chicago.

1 moth—Chicago (gift).

1 gerfalcon (gift).

HUDSON, DR. J. W., Ukiah, California.

1 photograph of California woodpecker storehouse (gift).

JONES, SARAH V. H., Sydney, Australia.

1 scorpion, 5 centipedes, 6 lizards—Honolulu (gift).

JORDAN, MRS. SCOTT, Chicago.

1 emu egg, 535 star-fish, sea-urchins, corals, shells (gift).

KEISTER, HENRY A., Meredosia, Illinois.

45 sunfishes—Meredosia, Illinois (gift).

KEITH, ELLSWORTH, Hinsdale, Illinois.

1 white-throated sparrow—Hinsdale, Illinois (gift).

KNICKERBOCKER, C. K., Chicago.

- 1 hybrid duck—Lake St. Croix, Wisconsin (gift).
- 2 everglade kites with nest—Palm Beach, Florida (gift).

KRANENBURG, H. J., Ardmore, Illinois.

- 1 spider—North Ardmore, Illinois (gift).

LEOPOLD, N. F., JR., Chicago.

- 1 Cooper's hawk (exchange).

LINCOLN PARK AQUARIUM, Chicago.

- 1 turtle—Havana, Illinois (gift).
- 1 brown trout (gift).
- 5 sunfishes—Lincoln Park Lagoon (gift).
- 2 minnows, 215 sunfishes—Fairport, Iowa (gift).
- 1 axolotl (gift).

LILJEBLAD, E., Chicago.

- 1 butterfly—Canclos, Ecuador (gift).

LINDSAY, ALEXANDER M., JR., Rochester, New York.

- 1 fringe-eared oryx—Tanganyika Colony, Africa (gift).

LINKEY, H., Chicago.

- 1 worm shell—coast of California (gift).

MCCORMICK, COL. ROBERT R., Chicago.

- 1 mounted ruffed bustard—Sahara Desert, Algeria (gift).

MCCREA, W. S., Chicago.

- 7 gizzard shad, Illinois (gift).
- 3 photographs of whale (gift).

MOSS, REV. A. MILES, Para, Brazil.

- 1 dragonfly—Para, Brazil (gift).

NEW YORK CONSERVATION COMMISSION, Albany, New York.

- 1 Chautauqua Lake muskallonge—New York (gift).

OLSSON, AXEL, Gloversville, New York.

- 5 lizards, 2 snakes—Piura, Peru (gift).

OTTOFY, DR. LOUIS, Chicago.

- 1 Korean spaniel (gift).

PERRY, MRS. C. N., Chicago.

- 2 shells—off coast of Florida (gift).

PRAY, LEON L., Chicago.

- 1 mud turtle—Homewood, Illinois (gift).
- 1 hybrid pickerel—Ithaca, New York (gift).

QUEENSLAND MUSEUM, Australia.

- 3 Australian lung-fishes (exchange).

ROTHSCHILD'S DEPT. STORE AQUARIUM, Chicago.

- 117 fishes, 5 amphibians, 2 snakes, 1 lizard, 7 insects (gift).
- 1 small-mouth bass—Sandusky, Ohio (gift).
- 31 salamanders, lizards, turtles, snakes—Florida, Texas, Arizona (gift).
- 1 soft-shelled turtle—Phoenix, Arizona (gift).
- 2 snakes—Florida (gift).

RUDHMAN, MRS. E., Delhi, California.

- 5 sand crickets—Delhi, California (gift).

ST. JOHN'S COLLEGE, Belize, British Honduras.

- 2 centipedes, 4 scorpions, 8 crustaceans, 30 fishes, 103 amphibians and reptiles, 5 mammals, 5 mammal skulls, 6 bird's eggs—British Honduras (gift).

SCHMIDT, F. J. W., Stanley, Wisconsin.

- 1 ring-necked snake—Stanley, Wisconsin (gift).
- 7 snakes, 27 frogs—Clark County, Wisconsin (gift).

SCHMIDT, KARL P., Chicago.

- 1 tree frog—Lakehurst, New Jersey (gift).
- 1 snake, 137 frogs, 475 fishes—Clark County, Wisconsin (gift).
- 1 toad—Monte Cristi, Santo Domingo (gift).
- 3 centipedes—Creston, Louisiana (gift).

SHOLAR, WENCEL, Peru, Illinois.

- 2 red-tailed hawks, Peru, Illinois (gift).

SLAGG, PROF. W. E., Eau Claire, Wisconsin.

- 1 Northern skink—Chippewa Falls, Wisconsin (gift).

SOMMERMEYER, CLIFTON, River Forest, Illinois.

- 1 hornet's nest—River Forest, Illinois (gift).

SOUTHERN BIOLOGICAL SUPPLY
COMPANY, New Orleans,
Louisiana.

80 fishes—Tammany Parish, Louisiana (gift).

650 fishes—Louisiana and Gulf of Mexico (gift).

TYRRELL, W. B., Chicago.

1 bat—Chicago (gift).

U. S. NATIONAL MUSEUM, Washington, D. C.

1 flounder—Oahu Island, Hawaii (exchange)

WALLER, DR. S. M., San Pedro Sula, Honduras.

3 birds—San Pedro Sula (gift).

WEED, ALFRED C., Chicago.

42 fishes, 15 cricket frogs, 6 tadpoles—New Lenox, Illinois (gift).

367 fishes—Marley, Illinois (gift).

9 mosquitoes, 3 frogs, 1 salamander larva—Chicago, Illinois (gift).

WEED, A. C., SUM, G., AND
BICHELE, J., Chicago.

255 fishes—Marley, Illinois (gift).

WICKS, L. A., Chicago.

1 beetle—Waverly Beach, Indiana (gift).

WILLIAMSON, JESSE, H., Bluffton, Indiana.

99 dragonflies—Central and South America (gift).

WISCONSIN CONSERVATION
COMMISSION, Madison, Wisconsin.

1 muskallonge—Vilas County, Wisconsin (gift).

WOLCOTT, A. B., Chicago.

1 fly, 3 moths—Chicago (gift).

WYATT, ALEX K., Chicago.

1 fly, Elizabeth, New Jersey (gift).

SECTION OF PHOTOGRAPHY

FIELD MUSEUM OF NATURAL
HISTORY.

Made by Section:

9,156 prints, 1,004 negatives, 526 lantern slides.

Made by F. C. Cole:

99 negatives of Malaysian natives, villages, landscapes.

Made by J. A. Mason:

60 films, negatives of Columbian natives, villages, landscapes.

DE VRY CORPORATION.

4 negatives of Egyptian subjects.

ART INSTITUTE OF CHICAGO.

18 photographs of types of natives of Australia.

18 photographs of types of natives of India.

McILHENNY, E. A., Chicago.

1 moving picture reel.

MILLSPAUGH, DR. C. F.

2 negatives of beetles imbedded in Amber.

PRATT, GEORGE D., Brooklyn, N. Y.

14 moving picture reels.

THE LIBRARY

LIST OF DONORS AND EXCHANGES

(Accessions are by exchange, unless otherwise designated)

AFRICA:

East Africa and Uganda Natural History Society, Nairobi.

Geological Society, Johannesburg.

Institut d'Egypte, Cairo.

Ministry of Public Works, Cairo.

Natal Museum, Pietermaritzburg.

Rhodesia Scientific Society, Bulawayo.

Royal Society of South Africa, Cape Town.

Société de Géographie d'Alger.

Société d'Histoire Naturelle de l'Afrique du Nord, Algeria.

Société des Sciences Naturelles du Maroc.

South African Association for the Advancement of Science, Cape Town.

South African Department of Agriculture, Pretoria.

South African Museum, Cape Town.
Transvaal Museum, Pretoria.

ARGENTINA:

Museo de La Plata.
 Museo Nacional, Buenos Aires.
 Sociedad Ornitológica del Plata,
 Buenos Aires.
 Universidad Nacional, Buenos Aires.

AUSTRALIA:

Australian Museum, Sydney.
 Botanic Gardens and Government
 Domains, Sydney.
 Commonwealth of Australia, Mel-
 bourne.
 Department of Agriculture, Adelaide.
 Department of Agriculture, Sydney.
 Department of Agriculture, Wellington.
 Department of Mines, Brisbane.
 Department of Mines, Sydney.
 Field Naturalists' Club, Melbourne.
 Fish Commission of New South Wales,
 Sydney.
 Forestry Commission, Sydney (gift).
 Geological Survey of Western Aus-
 tralia, Perth.
 Institute of Science and Industry,
 Sydney.
 Linnean Society of New South Wales,
 Sydney.
 Melbourne University.
 National Herbarium, Melbourne.
 Ornithological Society of South Aus-
 tralia, Adelaide.
 Public Library, Museum and Art
 Gallery, Adelaide.
 Public Library, Museum and National
 Gallery of Victoria, Melbourne.
 Queensland Museum, Brisbane.
 Royal Geographical Society of Aus-
 tralasia, Brisbane.
 Royal Society of New South Wales,
 Sydney.
 Royal Society of Queensland, Brisbane.
 Royal Society of South Australia,
 Adelaide.
 Royal Society of Tasmania, Hobart.
 Royal Society of Victoria, Melbourne.
 Royal Society of Western Australia,
 Perth.
 South Australian Museum, Adelaide.
 Victoria Department of Agriculture,
 Melbourne.
 Western Australia Geological Survey,
 Perth.

AUSTRIA:

Naturhistorisches Hofmuseum,
 Vienna.
 Naturhistorisches Landesmuseum
 von Kärnten, Klagenfurt.
 Universität, Vienna.
 Zoologisch-Botanische Gesellschaft,
 Vienna.
 Zoologisches Institut, Graz.

BELGIUM:

Académie Royale de Belgique, Brus-
 sels.
 Institut Botanique Léo Errera, Brus-
 sels.
 Jardin Botanique de l'État, Brussels.
 Ministère des Colonies, Brussels.
 Musée Royale d'Histoire Naturelle,
 Brussels.
 Nederlandsche Phytopathologische
 (Plantenziekten) Vereeniging, Ghent.
 Société de Botanique, Brussels.
 Société Royale d'Archéologie, Brus-
 sels.
 Vereenigingen Kruidkundig Genoot-
 schap Dodonaea, Ghent.

BRAZIL:

Academia Brasileira de Ciencias,
 Rio de Janeiro.
 Biblioteca Nacional, Rio de Janeiro.
 Escola Superior de Agricultura e
 Medicina, Veterinaria, Rio de
 Janeiro.
 Exposição do Centenario, Rio de
 Janeiro.
 Jardim Botânico, Rio de Janeiro.
 Museu Nacional, Rio de Janeiro.
 Museu Paulista, São Paulo.
 Sociedade Brasileira de Ciencias, Rio
 de Janeiro.

BRITISH GUIANA:

Board of Agriculture, Georgetown.
 Royal Agricultural and Commercial
 Society, Demerara.

CANADA:

Canadian Arctic Expedition, Ottawa
 (gift).
 Chief Game Guardian of Saskatche-
 wan, Regina.
 Department of Agriculture, Ottawa.
 Department of Agriculture, Victoria.
 Department of Mines, Ontario, Tor-
 onto.
 Department of Mines, Ottawa.
 Department of the Interior, Geolog-
 ical Survey, Ottawa.
 Entomological Society of Ontario,
 Toronto.
 Hamilton Association.
 Horticultural Societies, Toronto.
 Minister of Education, Ontario,
 Toronto.
 Provincial Museum, Toronto.
 Provincial Museum, Victoria.
 Royal Canadian Institute, Toronto.
 Royal Society of Canada, Ottawa.
 Société de Géographie, Québec.
 University of Toronto.

CEYLON:

Colombo Museum.

CHILE:

- Museo de Etnología y Antropología, Santiago.
- Museo Nacional de Chile, Santiago.

CHINA:

- Botany and Forestry Department, Hong-Kong.
- Geological Survey, Pekin.
- Royal Asiatic Society of North China, Shanghai.
- Science Society of China, Shanghai (gift).
- University of Nanking.

CZECHO-SLOVAKIA:

- National Museum Library, Prag.
- Societas Entomologica Bohemica, Prag.
- Universita Karlova, Prag.

DENMARK:

- Danske Kunstindustrimuseum, Copenhagen.
- Naturhistorisk Forening, Copenhagen.
- Royal Society of Northern Antiquaries, Copenhagen.
- Société Botanique, Copenhagen.

ECUADOR:

- Academia Nacional de Historia, Quito.

FEDERATED MALAY STATES:

- Federated Malay States Museum, Kuala Lumpur.

FIJI ISLANDS:

- Fijian Society, Suva.

FINLAND:

- Abo Akademi.
- Finnish Archaeological Society, Helsingfors.
- Societas pro Fauna et Flora Fennica, Helsingfors.

FRANCE:

- Académie des Sciences, Paris.
- Ecole d'Anthropologie, Paris.
- Ministère de l'Instruction Publique, Paris (gift).
- Musée Guimet, Paris.
- Muséum National d'Histoire Naturelle, Paris.
- La Nature, Paris.
- Société d'Etude des Sciences Naturelles, Reims.
- Société d'Etudes Scientifiques, Angers.
- Société d'Histoire Naturelle, Toulouse.
- Société d'Horticulture, Paris.
- Société de Géographie, Paris.
- Société de Géographie, Toulouse.
- Société des Américanistes, Paris.
- Société des Sciences Naturelles de Saône-et-Loire, Chalon-sur-Saône.
- Société Géologique du Nord, Lille.

Société Linguistique de Paris.

Société Linnéenne, Bordeaux.

Société Nationale d'Agriculture, Sciences et Arts, Angers.

Société Nationale d'Horticulture de France, Paris.

Société Royale des Sciences, Liège.

Société Zoologique, Paris.

Université de Montpellier. Institut de Zoologie, Cette.

Université de Rennes.

GERMANY:

Bayerische Akademie der Wissenschaften, Munich.

Botanischer Garten und Botanisches Museum, Berlin.

Botanischer Verein der Provinz Brandenburg, Berlin.

Deutsche Dendrologische Gesellschaft, Bonn-Poppelsdorf.

Deutsche Gesellschaft für Anthropologie, Ethnologie und Urgeschichte, Berlin.

Deutsche Morgenländische Gesellschaft, Leipzig.

Deutscher Seefischerei Verein, Berlin.

Deutsches Entomologisches Institut, Berlin.

Geographische Gesellschaft, Hamburg.

Gesellschaft für Erdkunde, Berlin.

Gesellschaft zur Förderung der Gesamten Naturwissenschaften, Marburg.

Hamburgische Universität.

K. Museum für Volkskunde, Berlin.

K. Preussische Akademie der Wissenschaften, Berlin.

K. Universitätsbibliothek, Marburg.

K. Universitätsbibliothek, Munich.

K. Zoologisches Anthropologisch-Ethnographisches Museum, Dresden.

K. Zoologisches Museum, Berlin.

Museum für Völkerkunde, Hamburg.

Museum für Völkerkunde, Leipzig.

Nassauischer Verein für Naturkunde, Wiesbaden.

Naturforschende Gesellschaft, Freiburg.

Naturforschende Gesellschaft, Görlitz.

Naturhistorische Gesellschaft, Nürnberg.

Naturwissenschaftliche Gesellschaft, Dresden.

Naturwissenschaftlicher Verein, Bremen.

Naturwissenschaftlicher Verein, Karlsruhe.

Naturwissenschaftlicher Verein für Schleswig-Holstein, Kiel.

Naturwissenschaftlicher Verein für Steiermark, Graz.

Naturwissenschaftlicher Verein zu Osnabrück.
 Ornithologische Gesellschaft in Bayern, Munich.
 Rheinische Mission-Gesellschaft, Bar-men.
 Schlesische Gesellschaft für Vaterländische Cultur, Breslau.
 Senckenbergische Naturforschende Gesellschaft, Frankfurt a-M.
 Württembergische Gesellschaft zur Förderung der Wissenschaften, Tübingen.
 Zoologisches Museum, Hamburg.

GREAT BRITAIN:

Ashmolean Museum, Oxford.
 Birmingham Natural History and Philosophical Society.
 Bristol Museum and Gallery.
 British Museum, London.
 British Museum (Natural History), London.
 Cambridge Antiquarian Society.
 Cambridge Philosophical Society.
 Cambridge University.
 Cardiff Naturalists' Society.
 Challenger Society, London.
 Dove Marine Laboratory, Cullercoats.
 Dumfriesshire and Galloway Natural History and Antiquarian Society, Dumfries.
 Fisheries Board, Edinburgh.
 Geological Society, Edinburgh.
 Geological Society, Liverpool.
 Great Britain Geological Survey, London.
 Horniman Museum and Library, London.
 Hull Municipal Museum.
 Imperial Bureau of Entomology, London.
 Imperial College of Science and Technology, London.
 Japan Society of London.
 Lancashire Sea Fisheries Laboratory, Liverpool.
 Linnean Society, London.
 Liverpool Biological Society.
 London Library.
 Manchester Field Naturalists' and Archaeologists' Society.
 Manchester Geographical Society.
 Manchester Literary and Philosophical Society.
 Manchester Museum.
 Marine Biological Association, Plymouth.
 National Library of Wales, Aberystwyth.
 National Museum of Wales, Cardiff.

Natural History and Philosophical Society, Brighton and Hove.
 Natural History and Philosophical Society, Croydon.
 Natural History Society, Glasgow.
 Natural History Society of Northumberland, Durham and Newcastle-on-Tyne, Newcastle.
 Oriental Ceramic Society, London.
 Royal Anthropological Institute of Great Britain and Ireland, London.
 Royal Botanic Gardens, Edinburgh.
 Royal Botanic Gardens, Kew.
 Royal Colonial Institute, London.
 Royal Geographical Society, London.
 Royal Horticultural Society, London.
 Royal Scottish Museum, Edinburgh.
 Royal Society, London.
 Royal Society of Arts, London.
 Royal Society of Edinburgh.
 South London Entomological and Natural History Society, London.
 Tring Zoological Museum.
 Victoria and Albert Museum, London.
 Wellcome Chemical Research Laboratories, London.
 Zoological Society of London.
 Zoological Society of Scotland.

HUNGARY:

Hungarian Institute of Ornithology, Budapest.
 Magyar Természettudományi Társulat, Budapest.
 Museum Nationale Hungaricum, Budapest.

INDIA:

Anthropological Society, Bombay.
 Archaeological Department, Madras.
 Archaeological Survey, Allahabad.
 Archaeological Survey, Burma, Rangoon.
 Archaeological Survey, Calcutta.
 Archaeological Survey, Eastern Circle, Patna.
 Archaeological Survey, Frontier Circle, Peshawar.
 Archaeological Survey of Burma, Lahore.
 Asiatic Society of Bengal, Calcutta.
 Bihar and Orissa Research Society, Patna.
 Department of Agriculture, Bombay.
 Department of Agriculture, Madras.
 Department of Agriculture, Poona.
 Department of Agriculture, Pusa.
 Geological Survey, Calcutta.
 Government of India, Calcutta.
 Government, Cinchona Plantation, Calcutta.
 Government Museum, Madras.
 Indian Museum, Calcutta.

Journal of Indian Botany, Madras.
National Indian Association, Calcutta (gift).
Royal Asiatic Society, North China Branch, Shanghai.
Royal Asiatic Society, Straits Branch, Singapore.
Royal Botanic Garden, Calcutta.
University of Calcutta.
Victoria and Albert Museum, Bombay.
Zoological Survey of India, Calcutta.

IRELAND:

Belfast Naturalists' Field Club.
Department of Agriculture, Scientific Investigations, Dublin.
Geological Survey, Dublin.
National Museum of Science and Art, Dublin.
Natural History and Philosophical Society, Belfast.
Royal Irish Academy, Dublin.
Royal Dublin Society.

ITALY:

Accademia delle Scienze Fisiche e Matematiche, Naples.
Accademia Gioenia di Scienze Naturali, Catania.
Istituto Botanica, Università di Pavia.
Istituto Geografico de Agostini, Novara.
Laboratorio di Zoologia Generale e Agraria, Portici.
Musei Zoologiae ed Anatomia Comparata, Turin.
Museo Civico di Storia Naturale, Genoa.
R. Accademia delle Scienze di Torino.
R. Accademia Nazionale dei Lincei, Rome.
R. Orto Botanico Giardino Coloniale, Palermo.
R. Scuola Superiore di Agricoltura, Portici.
R. Società Geografica Italiana, Rome.
Società di Scienze Naturali ed Economiche, Palermo.
Società Geologica Italiana, Rome.
Società Italiana d'Antropologia e Etnologia, Florence.
Società Italiana de Scienze Naturali, Milan.
Società Toscana di Scienze Naturali, Pisa.

JAPAN:

Deutsche Gesellschaft für Natur- und Völkerkunde Ostasiens, Tokyo.
Educational Museum, Tokyo.
Geological Society, Tokyo.
Imperial University, Taihoku.
Imperial University of Tokyo, College of Science.

Ornithological Society, Tokyo.
Tokyo Botanical Society.

JAVA:

Bataviaasch Genootschap van Kunsten en Wetenschappen, Batavia.
Department of Agriculture, Buitenzorg.
Encyclopaedisch Bureau, Weltevreden.
Jardin Botanique, Weltevreden.
Java Instituut, Weltevreden.
K. Natuurkundige Vereeniging in Nederlandsch-Indie, Weltevreden.

MEXICO:

Instituto Geologico de Mexico.
Museo Nacional de Arqueologia, Historia y Etnografia, Mexico.
Secretaria de Agricultura y Fomento.
Direccion de Antropologia, Mexico.
Sociedad Cientifica "Antonio Alzate," Mexico.
Sociedad Geológica Mexicana, Mexico.

NETHERLANDS:

Directie van den Landbouw, Hague.
Koloniaal Instituut, Amsterdam.
K. Akademie van Wetenschappen, Amsterdam.
K. Instituut voor de Taal-Land-en Volkenkunde van Nederlandsch Indie, Hague.
K. Nederlandsch Aardijkundig Genootschap, Amsterdam.
Museum voor Land-en Volkenkunde en Maritiem Museum "Prinz Hendrik," Rotterdam.
Nederlandsche Dierkunde Vereeniging, Leiden.
Nederlandsche Phytopathologische Vereeniging, Wageningen.
Rijks Ethnographisch Museum, Leiden.
Rijks Hoogere Land-Tuin-en Boschbouwschool, Wageningen.
Rijks Museum van Natuurlijke Historie, Leiden.
Universiteit van Amsterdam, Bibliothek.

NEW ZEALAND:

Acclimatisation Society, Wellington.
Auckland Institute and Museum, Wellington.
Canterbury Museum, Christchurch.
Department of Agriculture, Wellington.
Department of Mines, Wellington.
Dominion Museum, Wellington.
Geological Survey, Wellington.
New Zealand Board of Science and Art, Wellington.



TYPE OF CASE LOANED TO SCHOOLS BY THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF
FIELD MUSEUM OF NATURAL HISTORY.
One sixth actual size.

NORWAY:

- Bergen Museum.
- Norges Geologiske Underskoelse, Christiania.
- Physiographiske Forening i Christiania.
- Tromsø Museum.

PERU:

- Cuerpo de Ingenieros de Minas, Lima.
- Sociedad Geografica, Lima.

POLAND:

- Musei Polonici Historiae Naturales, Warsaw.
- Société Botanique de Pologne, Warsaw.
- Société Scientifique de Poznan.

PORTUGAL:

- Biblioteca Nacional, Lisbon.
- Collegio de San Fiel, Braga.
- Société Portugaise des Sciences Naturelles, Lisbon.

RUSSIA:

- Académie Impériale des Sciences, Petrograd.
- Universität Dorpatensis.

SPAIN:

- Collegio de Pasaje, La Guardia.
- Institució Catalana d'Historia Natural, Barcelona.
- Instituto General y Tecnico, Valencia.
- Junta de Ciencias Naturals, Barcelona.
- Junta para Ampliación de Estudios e Investigaciones Científicas, Madrid.
- R. Academia de Ciencias Exactas, Físicas y Naturales, Madrid.
- R. Academia de Ciencias y Artes, Barcelona.
- Sociedad Española de Historia Natural, Madrid.

SWEDEN:

- K. Svenska Vetenskapsakademien, Stockholm.
- K. Vetenskaps-och Vitterhets Samhälle, Göteborg.
- K. Vitterhets Historie och Antikvitets Akademien, Stockholm.
- Lunds Universitet.
- Regia Societas Scientiarum Upsaliensis.
- Svenska Sällskapet för Antropologi och Geografi, Stockholm.
- Universitet Biblioteket, Upsala.

SWITZERLAND:

- Botanisches Museum, Zürich.
- Conservatoire et Jardin Botaniques, Geneva.
- Geographisch-Ethnographische Gesellschaft, Zürich.

- Historisches Museum, Bern.
- Naturforschende Gesellschaft, Basel.
- Naturforschende Gesellschaft, Bern.
- Naturforschende Gesellschaft, Zürich.
- Naturhistorisches Museum, Basel.
- Ostschweizerische Geograph-Commercielle Gesellschaft, St. Gallen.
- Société Helvétique des Sciences Naturelles, Bern.
- Société de Physique et d'Histoire Naturelle, Geneva.
- Société Entomologique, Bern.
- Société Fribourgeoise des Sciences Naturelles, Fribourg.
- Société Neuchateloise de Géographie. Universität, Bern.

VENEZUELA:

- Cultura Venezolana, Caracas.

WEST INDIES:

- Academia Nacional de Artes y Letras, Havana.
- Agricultural Experiment Station, Porto Rico.
- Biblioteca Nacional, Havana.
- Department of Agriculture of Jamaica, Kingston.
- Imperial Department of Agriculture, Barbados.
- Trinidad and Tobago Department of Agriculture, Port of Spain.
- Universidad de Habana.

- Ahl, Ernst, Berlin.
- Amalgamated Press, London (gift).
- Berg, Bengt, Stockholm (gift).
- Beyer, Hermann, Mexico (gift).
- Boman, Eric, Buenos Aires (gift).
- Camus, A., Paris (gift).
- Carpenter, G. H., Dublin.
- Charlesworth and Company, Haywards Heath (gift).
- Dunod, H., Paris.
- Faura y Sans, M., Barcelona (gift).
- Fritsch, Karl, Graz.
- Gadeau de Kerville, Henri, Paris (gift).
- Gaumer, George F., Mexico (gift).
- Gleerup, C. W. K., Lund.
- Herrera, Alfonso L., Mexico.
- Huard, A., Quebec.
- Janet, Charles, Paris.
- Joyce, T. A., London.
- Koch-Grünberg, Theodor, Stuttgart (gift).
- Laubmann, A., Munich (gift).
- Loesener, T., (gift).
- Loubat, Duc de, Paris.
- MacRitchie, David, Edinburgh.
- Maiden, J. H., Sydney.
- Martelli, Ugolini, Pisa.
- Outes, Felix F., Buenos Aires.

Pittier, Henri, Caracas.
 Ramirez Goyena, Miguel, Managua (gift).
 Reyes, César, Buenos Aires (gift).
 Richter, Rudolph, Frankfurt a. M. (gift).
 Rivas Vicuña, Francisco, Bern (gift).
 Rivet, P., Paris.
 Roth, Walter E., Georgetown.
 Sapir, Edward, Ottawa.
 Schinz, Hans, Zürich (gift).
 Strehlneek, E. A., Shanghai.
 Stresemann, E., Berlin.
 Weber, Friedrich, Leipzig (gift).
 Widder, Felix J., Graz (gift).
 Wulffing, E. A., Heidelberg.
 Zimanyi, Karoly, Budapest.
 Zulueta, Francis de, Oxford (gift).

ALABAMA:

Anthropological Society, Montgomery.
 Department of Conservation, Montgomery.
 Geological Survey, University.

CALIFORNIA:

Agricultural Experiment Station, Berkeley.
 California Academy of Sciences, San Francisco.
 Citrus Experiment Station, Riverside.
 Cooper Ornithological Club, Hollywood.
 Henry E. Huntington Library and Art Gallery, San Gabriel (gift).
 Pomona College, Claremont.
 Scripps Institution of Biological Research, La Jolla.
 Southern California Academy of Sciences, Los Angeles.
 Southwest Museum, Los Angeles.
 Stanford University.
 State Board of Forestry, Sacramento.
 State Mining Bureau, Sacramento.
 University of California, Berkeley.

COLORADO:

Bureau of Mines, Denver.
 Colorado College, Colorado Springs.
 Colorado Museum of Natural History, Denver.
 Colorado Scientific Society, Denver.
 Colorado University, Boulder.
 State Historical and Natural History Society, Denver.

CONNECTICUT:

Agricultural Experiment Station, New Haven.
 American Oriental Society, New Haven.
 Connecticut Academy of Arts and Sciences, New Haven.

Hartford Public Library.
 Peabody Museum, New Haven.
 State Geological and Natural History Survey, Hartford.
 Wesleyan University, Middletown.
 Yale University, New Haven.

GEORGIA:

Central of Georgia Railway, Savannah (gift).
 Geological Survey, Atlanta.

HAWAII:

Agricultural Experiment Station, Honolulu.
 Bernice Pauahi Bishop Museum, Honolulu.
 Board of Commissioners of Agriculture and Forestry, Honolulu.
 Hawaiian Entomological Society, Honolulu.
 Hawaiian Historical Society, Honolulu.

IDAHO:

Mining Industry, Boise.
 State Historical Society of Idaho, Boise.
 University of Idaho, Moscow.

ILLINOIS:

Agricultural Experiment Station, Urbana.
 Art Institute of Chicago.
 Audubon Society, Chicago.
 Augustana College and Theological Seminary, Rock Island.
 Board of Education, Chicago.
 Chicago Historical Society.
 Chicago Public Library.
 Division of Natural History Survey, Urbana.
 Hardwood Record, Chicago (gift).
 John Crerar Library, Chicago.
 Lake Forest College.
 Newberry Library, Chicago.
 Northwestern University, Evanston.
 Open Court Publishing Company, Chicago.
 State Academy of Science, Springfield.
 State Board of Agriculture, Springfield.
 State Geological Survey, Urbana.
 State Historical Library, Springfield.
 State Water Survey, Urbana.
 Superintendent of Public Instruction, Springfield.
 Sweet, Wallach and Company, Chicago (gift).
 University of Chicago.
 University of Illinois, Urbana.
 West Chicago Park Commissioners.

INDIANA:

Academy of Science, Indianapolis.
 Department of Conservation, Indianapolis.
 Indiana University, Bloomington.
 Legislative Reference Bureau, Indianapolis.
 Purdue University, Lafayette.
 University of Notre Dame.

IOWA:

Academy of Science, Des Moines.
 Ames Forestry Club.
 Horticultural Society, Des Moines.
 Iowa Geological Survey, Des Moines.
 Iowa State College, Ames.
 University of Iowa, Iowa City.

KANSAS:

Agricultural Experiment Station,
 Manhattan.
 State Board of Agriculture, Topeka.
 State Geological Survey, Lawrence.
 University of Kansas, Lawrence.

KENTUCKY:

Agricultural Experiment Station,
 Louisville.

LOUISIANA:

Agricultural Experiment Station,
 Baton Rouge.
 Department of Conservation, New Orleans.

MAINE:

Agricultural Experiment Station,
 Orono.
 Bowdoin College, Brunswick.
 Portland Public Library.

MARYLAND:

Agricultural Experiment Station,
 College Park.
 Maryland Geological Survey, Baltimore.

MASSACHUSETTS:

Agricultural Experiment Station, Amherst.
 American Academy of Arts and Sciences, Boston.
 American Antiquarian Society, Worcester.
 Bermuda Biological Station, Cambridge.
 Boston Public Library.
 Boston Society of Natural History.
 Harvard College, Museum of Comparative Zoology, Cambridge.
 Harvard University. Arnold Arboretum, Jamaica Plain.
 Harvard University. Gray Herbarium, Cambridge.

Massachusetts Horticultural Society, Boston.

Museum of Fine Arts, Boston.
 New Bedford Free Public Library.
 Peabody Institute.
 Peabody Museum, Cambridge.
 Peabody Museum, Salem.
 Phillips Academy, Andover.
 Salem Public Library.
 Smith College, Northampton.
 Springfield City Library Association.
 Springfield Natural History Museum.
 Tufts College.
 Williams College, Williamstown.

MICHIGAN:

Agricultural Experiment Station,
 Agricultural College.
 Chamberlain Memorial Museum,
 Three Oaks.
 Detroit Institute of Art.
 Geological and Natural History Survey, Lansing.
 Grand Rapids Public Library.
 Michigan Academy of Science, Ann Arbor.
 Michigan College of Mines, Houghton.
 Michigan State Library, Lansing.
 State Board of Agriculture, Lansing.
 State Board of Library Commissions, Lansing.
 University of Michigan, Ann Arbor.

MINNESOTA:

Agricultural Experiment Station,
 University Farm.
 Minneapolis Institute of Arts.
 Minnesota Geological Survey, Minneapolis.
 Minnesota Historical Society, Saint Paul.
 Saint Paul Institute.
 State Entomologist, University Farm.
 University of Minnesota, Minneapolis.

MISSISSIPPI:

Agricultural Experiment Station,
 Agricultural College.

MISSOURI:

Agricultural Experiment Station,
 Columbia.
 City Art Museum, Saint Louis.
 Missouri Botanic Garden, Saint Louis.
 Missouri Historical Society, Columbia.
 Saint Louis Academy of Science.
 Saint Louis Public Library.
 Saint Louis University.
 University of Missouri. School of Mines, Rolla.
 Washington University, Saint Louis.

MONTANA:

University of Montana, Missoula.

NEBRASKA:

University of Nebraska, Lincoln.

NEVADA:

Agricultural Experiment Station,
Reno.

NEW JERSEY:

Agricultural Experiment Station,
Trenton.

Department of Conservation and De-
velopment, Trenton.

Newark Museums Association.
Princeton University.

NEW MEXICO:

New Mexico Museum, Santa Fe.

NEW YORK:

Agricultural Experiment Station,
Geneva.

American Geographical Society, New
York City.

American Museum of Natural History,
New York City.

Asia Publishing Company, New York
City.

Brooklyn Botanic Garden.

Brooklyn Institute of Arts and
Sciences.

Buffalo Society of Natural Sciences.

Carnegie Foundation for the Adv-
ancement of Teaching, New York
City (gift).

Cooper Union for the Advancement of
Science and Art, New York City.

Cornell University, Ithaca.

Forest and Stream Publishing Com-
pany, New York City.

Inter-American Magazine, New York
City (gift).

Japan Society, New York City.

Metropolitan Museum of Art, New
York City.

Museum of the American Indian,
New York City.

New York Academy of Sciences, New
York City.

New York Botanical Garden, New
York City.

New York Historical Society, New
York City.

Pratt Institute Free Library, New
York City.

Public Library, New York City.

Rochester Academy of Science.

Rockefeller Foundation, New York
City.

State College of Forestry, Syracuse.

State Library, Albany.

State Museum, Albany.

Staten Island Institute of Arts and
Sciences, New York City.

Stone Publishing Company, New
York City.

University of the State of New York,
Albany.

Zoological Society, New York City.

NORTH CAROLINA:

Elisha Mitchell Scientific Society,
Chapel Hill.

NORTH DAKOTA:

University of North Dakota, Univer-
sity.

OHIO:

Agricultural Experiment Station,
Wooster.

Cincinnati Museum Association.

Cleveland Museum of Art.

Cleveland Public Library.

Denison University, Granville.

Geological Survey, Columbus.

State Archaeological and Historical
Society, Columbus.

State University, Columbus.

University of Cincinnati.

Wilson Ornithological Club, Oberlin.

OREGON:

Agricultural Experiment Station, Cor-
vallis.

University of Oregon, Eugene.

PENNSYLVANIA:

American Philosophical Society, Phila-
delphia.

Association of Engineering Societies,
Philadelphia.

Bryn Mawr College.

Carnegie Institute, Pittsburgh.

Carnegie Library, Pittsburgh.

Carnegie Museum, Pittsburgh.

Delaware County Institute of Science,
Media.

Dropsie College, Philadelphia.

Engineers' Society of Western Penn-
sylvania, Pittsburgh.

Franklin Institute, Philadelphia.

Numismatic and Antiquarian Society,
Philadelphia.

Pennsylvania Museum and School of
Industrial Art, Philadelphia.

Philadelphia Academy of Natural
Sciences.

Philadelphia College of Pharmacy.

Philadelphia Commercial Museum.

Sullivant Moss Society, Pittsburgh.

University of Pennsylvania, Phila-
delphia.

University of Pennsylvania; Museum,
Philadelphia.

Wagner Free Institute of Science,
Philadelphia.

Wyoming Historical and Geological
Society, Wilkes-Barre.

PHILIPPINE ISLANDS:

Bureau of Education, Manila.
 Department of Agriculture, Manila.
 Department of Agriculture and Natural Resources, Manila.
 Department of Interior, Bureau of Science, Manila.

RHODE ISLAND:

Park Museum, Providence.

SOUTH CAROLINA:

Charleston Museum.

SOUTH DAKOTA:

Agricultural Experiment Station, Brookings.
 Geological and Natural History Survey, Vermilion.

TENNESSEE:

Department of Education. Division of Geology, Nashville.

TEXAS:

Agricultural Experiment Station, College Station.
 Scientific Society of San Antonio.
 University of Texas, Austin.

VERMONT:

Agricultural Experiment Station, Burlington.
 State Forester, Montpelier.

VIRGINIA:

State Library, Richmond.
 University of Virginia, Charlottesville.
 Virginia Geological Survey, Charlottesville.
 Virginia State Forester, Charlottesville.

WASHINGTON:

Department of Conservation and Development. Division of Geology, Olympia.
 Washington Geological Survey, Pullman.
 Washington University, Seattle.
 Washington University, Historical Society, Seattle.

WASHINGTON, D. C.:

American Association for the Advancement of Science (gift).
 American Mining Congress.
 Association for the Study of Negro Life and History.
 Carnegie Institution of Washington (gift).
 Library of Congress.
 National Academy of Sciences.
 National Education Association (gift).
 National Zoological Park.
 Pan American Union.
 Smithsonian Institution.
 United States Government.
 United States National Museum.

WEST VIRGINIA:

State Department of Agriculture, Charleston.
 West Virginia University, Morgantown.

WISCONSIN:

Agricultural Experiment Station, Madison.
 Beloit College.
 Geological and Natural History Survey, Madison.
 Public Museum of Milwaukee.
 State Horticultural Society, Madison.
 University of Wisconsin, Madison.

Allen, Thomas G., Chicago (gift).
 Ames, Oakes, Boston.
 Ayer, Edward E., Chicago (gift).
 Bailey, L. H., Ithaca.
 Baker, Frank C., Urbana.
 Blatchley, W. S., Indianapolis.
 Brennan, George A., Chicago (gift).
 Britton, Elizabeth G., New York City (gift).
 Chalmers, W. J., Chicago (gift).
 Cockerell, T. D. A., Boulder.
 Cook, Melville T., Rio Piedras.
 Davies, D. C., Chicago (gift).
 Davis, William T., New Brighton (gift).
 Dixon, Roland B., Cambridge.
 Edgerton, William F., Chicago (gift).
 Engelmann, W. F., Chicago (gift).
 Evans, Alexander W., New Haven.
 Farwell, Oliver A., Detroit (gift).
 Field, Stanley, Chicago (gift).
 Gault, B. T., Glen Ellyn.
 Gerhard, W. J., Chicago (gift).
 Goldnamer, William E., Chicago (gift).
 Greenman, Jesse M., Saint Louis (gift).
 Gunsaulus, Helen C., Chicago (gift).
 Holzinger, J. M., Winona (gift).
 Lewis, A. B., Chicago.
 McCormick, L. Hamilton, Chicago (gift).
 MacCurdy, George Grant, New Haven.
 Macfarlane, J. M., Philadelphia (gift).
 Meyers, George S., Jersey City (gift).
 Millspaugh, C. F., Chicago.
 Millspaugh, Mrs. C. F., Chicago (gift).
 Osborn, Henry T., New York City.
 Payne, John Barton, Chicago (gift).
 Penrose, R. A. F., Philadelphia (gift).
 Ramey, Fred, East Saint Louis.
 Robb, Mrs. George W., Borden (gift).
 Schaffner, John F., Columbus (gift).
 Springer, Frank, Las Vegas.
 Strong, R. M., Chicago.
 Todd, W. E. C., Pittsburgh.
 Trelease, William, Urbana.
 Weed, Alfred C., Chicago (gift).
 Weiss, Harry B., New Jersey.
 Weld, Lewis H., Washington (gift).
 Wolcott, A. B., Chicago (gift).

ARTICLES OF INCORPORATION

STATE OF ILLINOIS

DEPARTMENT OF STATE

WILLIAM H. HINRICHSSEN, *Secretary of State.*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A. D. 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSSEN,
Secretary of State.

[SEAL]

TO HON. WILLIAM H. HINRICHSSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to-wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."

2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archæology, Science and History.

3. The management of the aforesaid museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.

4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Edward E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch, James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed),

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McCurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlsaat, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Azel F. Hatch, Henry Wade Rogers, Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, Geo. F. Bissell, John R. Walsh, Chas. Fitzsimmons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS }
COOK COUNTY } ss.

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

G. R. MITCHELL,

[SEAL]

NOTARY PUBLIC, COOK COUNTY, ILL.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

CHANGE IN ARTICLE 3.

Pursuant to a resolution at a meeting of the corporate members held the 10th day of May, 1920, the management of FIELD MUSEUM OF NATURAL HISTORY shall be invested in a Board of TWENTY-ONE (21) TRUSTEES, who shall be elected in such manner and for such time and term of office as may be provided for by the By-Laws. A certificate to this effect was filed May 21, 1920, in the office of the Secretary of State for Illinois.

AMENDED BY-LAWS

APRIL 16, 1923

ARTICLE I.

MEMBERS

SECTION 1. Members shall be of seven classes, Corporate Members, Honorary Members, Patrons, Life Members, Associate Members, Sustaining Members, and Annual Members.

SECTION 2. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such person named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of twenty (\$20.00) dollars or more. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SECTION 3. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

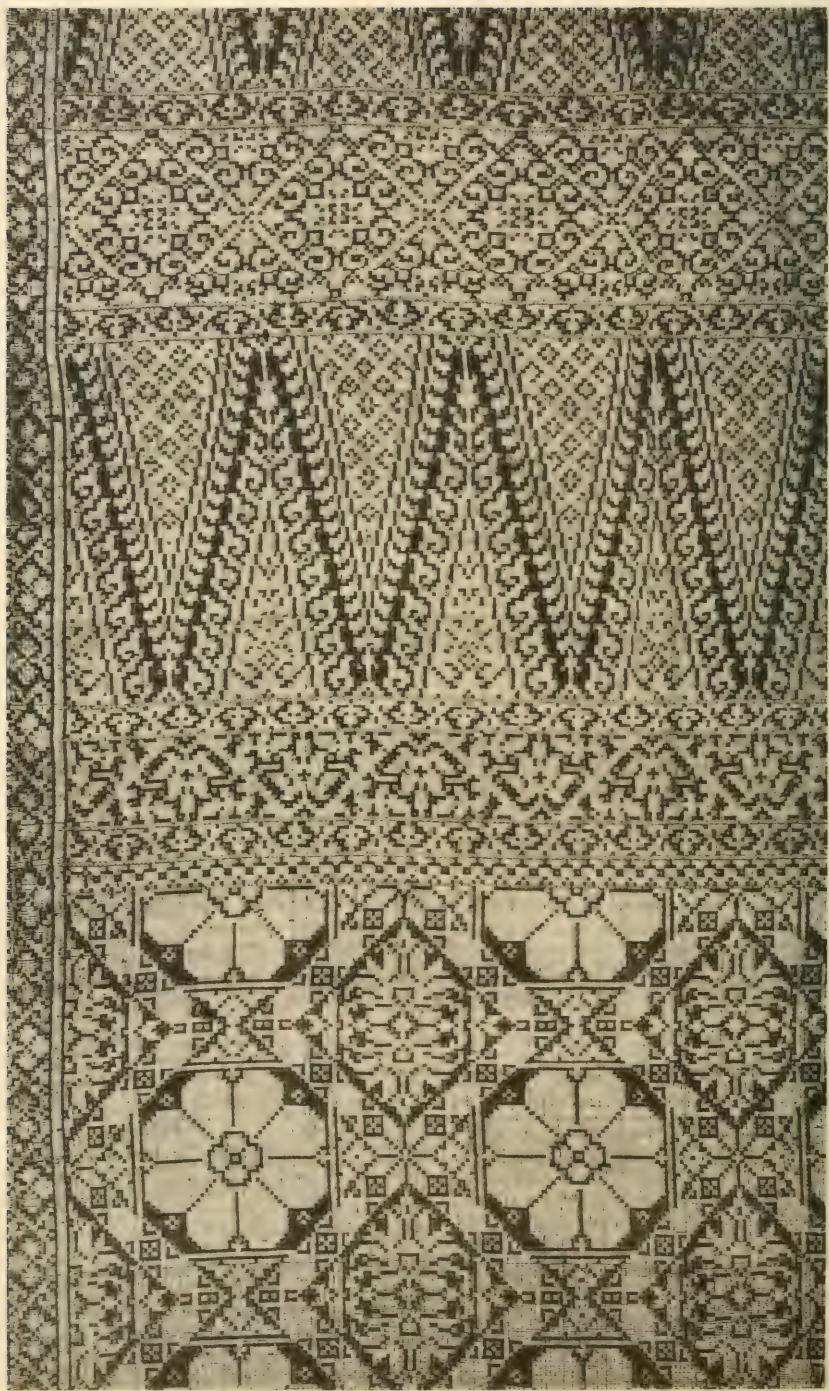
SECTION 4. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SECTION 5. Any person paying into the treasury the sum of five hundred (\$500.00) dollars, at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees.

SECTION 6. Any person paying into the treasury of the Museum the sum of one hundred (\$100.00) dollars, at any one time, shall upon the unanimous vote of the Board, become an Associate Member. Associate Members shall be entitled to: tickets admitting member and members of family, including non-resident home guests; all publications of the Museum, if so desired; reserved seats to all lectures and entertainments under the auspices of the Museum, provided reservation is requested in advance; and admission of holder of membership and accompanying party to all special exhibits and Museum functions day or evening.

SECTION 7. Sustaining Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of twenty-five (\$25.00) dollars, payable within thirty days after notice of election and within thirty days after each recurring annual date. This Sustaining Membership entitles the member to free admission for the member and family to Museum on any day and allows 25 admission coupons,

THE LIBRARY
OF THE
UNIVERSITY OF ILLINOIS



ROYAL SARONG OR SKIRT WOVEN IN GOLD THREADS, PERAK MALAY

ARTHUR B. JONES EXPEDITION TO MALAYSIA 1922-23.

78 x 36 inches.

which may be used by any one, the Annual Report and such other Museum documents or publications as may be requested in writing. When a Sustaining Member has paid the annual fee of \$25.00 for six years, such member shall be entitled to become an Associate Member.

SECTION 8. Annual Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of ten (\$10.00) dollars, payable within thirty days after each recurring annual date. An Annual Membership shall entitle the member to a card of admission for the member and family during all hours when the Museum is open to the public, and free admission for the member and family to all Museum lectures or entertainments. This membership will also entitle the holder to the courtesies of the membership privileges of every Museum of note in the United States and Canada, so long as the existing system of cooperative interchange of membership tickets shall be maintained, including tickets for any lectures given under the auspices of any of the Museums during a visit to the cities in which the cooperative museums are located.

ARTICLE II.

BOARD OF TRUSTEES

SECTION 1. The Board of Trustees shall consist of twenty-one members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting of the Board, by a majority vote of the members of the Board present.

SECTION 2. Regular meetings of the Board shall be held monthly. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SECTION 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary.

ARTICLE III.

HONORARY TRUSTEES

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, those Trustees who by reason of inability, on account of change of residence, or for other cause or from indisposition to serve longer in such capacity shall resign their place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees, whether regular or special, and will be expected to be present at all such meetings and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

ARTICLE IV.

OFFICERS

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Third Vice-President, a Secretary, an Assistant Secretary and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President,

the First Vice-President, the Second Vice-President, and the Third Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the third Monday of January of each year, and shall be called the Annual Meeting.

SECTION 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SECTION 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

ARTICLE V.

THE TREASURER

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation except as hereinafter provided. He shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents, or any member of the Finance Committee.

SECTION 2. The securities and muniments of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniments of title to the joint order of the following officers, namely The President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum.

SECTION 3. The Treasurer shall give bond in such amount, and with such sureties as shall be approved by the Board of Trustees.

SECTION 4. The Harris Trust & Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of Field Museum" fund. The bank shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents, or any member of the Finance Committee.

ARTICLE VI.

THE DIRECTOR

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have immediate charge and supervision of the Museum, and shall control the operations of the Institution, subject to the authority of the Board of Trustees and its Committees. The Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SECTION 2. There shall be four scientific departments of the Museum—Anthropology, Botany, Geology and Zoölogy; each under the charge of a Curator, subject to the authority of the Director. The Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the

scientific departments shall be appointed and removed by the Director upon the recommendation of the Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SECTION 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the Board may direct.

ARTICLE VII.

AUDITOR

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all bills rendered for the expenditure of the money of the Corporation.

ARTICLE VIII.

COMMITTEES

SECTION 1. There shall be five Committees, as follows: Finance, Building, Auditing, Pension and Executive.

SECTION 2. The Finance Committee shall consist of five members, the Auditing and Pension Committees shall each consist of three members, and the Building Committee shall consist of five members. All members of these four Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SECTION 3. The Executive Committee shall consist of the President of the Board, the Chairman of the Finance Committee, the Chairman of the Building Committee, the Chairman of the Auditing Committee, the Chairman of the Pension Committee, and three other members of the Board to be elected by ballot at the Annual Meeting.

SECTION 4. Four members shall constitute a quorum of the Executive Committee, and in all standing Committees two members shall constitute a quorum. In the event that, owing to the absence or inability of members, a quorum of the regularly elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any members of the Board of Trustees to act in place of the absentee.

SECTION 5. The Finance Committee shall have supervision of investing the endowment and other permanent funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to invest, sell, and reinvest funds, subject to the approval of the Board.

SECTION 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SECTION 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the expenditures as stated are authorized.

SECTION 8. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SECTION 9. The Pension Committee shall determine by such means and processes as shall be established by the Board of Trustees to whom and in what amount the Pension Fund shall be distributed. These determinations or findings shall be subject to the approval of the Board of Trustees.

SECTION 10. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SECTION 11. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

ARTICLE IX.

NOMINATING COMMITTEE

SECTION 1. At the November meeting of the Board each year, a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Auditing Committee, and the Pension Committee, and for three members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.

ARTICLE X.

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution and the workings, researches, installations, expenditures, field work, laboratories, library, publications, lecture courses, and all scientific and maintenance activities.

SECTION 2. These By-Laws may be amended at any regular meeting of the Board of Trustees by a two-thirds vote of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.

HONORARY MEMBERS

AYER, EDWARD E.
AYER, MRS. EDWARD E.
BLACKSTONE, MRS. T. B.
CHALMERS, WILLIAM J.
CRANE, CHARLES R.
FIELD, MARSHALL
FIELD, STANLEY

GRAHAM, ERNEST R.
HARRIS, ALBERT W.
JONES, ARTHUR B.
McCORMICK, STANLEY
RYERSON, MARTIN A.
SIMPSON, JAMES
SPRAGUE, ALBERT A.

PATRONS

ANDERSON, PEIRCE
ARMOUR, ALLISON V.
BUTLER, EDWARD B.
COLLINS, ALFRED M.
CUMMINGS, MRS. ROBERT F.
DAY, LEE GARNETT
HUTCHINSON, CHARLES L.
KELLEY, WILLIAM V.

KENNEDY, VERNON SHAW
KUNZ, GEORGE F.
MANIERRE, GEORGE
MARKHAM, CHARLES H.
PAYNE, JOHN BARTON
PROBST, EDWARD
SARGENT, HOMER E.
SMITH, WILLARD A.

WHITE, HOWARD J.

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ANDERSON, PEIRCE
ARMOUR, ALLISON V.
AYER, EDWARD E.

BLAIR, WATSON F.
BORDEN, JOHN
BUTLER, EDWARD B.
BYRAM, HARRY E.

CHALMERS, W. J.
CHATFIELD-TAYLOR, H. C.
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CRANE, Jr., RICHARD T.
CUMMINGS, MRS. ROBERT F.

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DAY, LEE GARNETT

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ELLSWORTH, JAMES W.

FIELD, MARSHALL
FIELD, STANLEY

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KENNEDY, VERNON SHAW
KOHLSAAT, HERMAN H.
KUNZ, GEORGE F.

McCORMICK, CYRUS H.
MANIERRE, GEORGE
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MITCHELL, JOHN J.

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PROBST, EDWARD

RYERSON, MARTIN A.

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SIMPSON, JAMES
SMITH, SOLOMON A.
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SPRAGUE, ALBERT A.
STONE, MELVILLE E.

WHITE, HOWARD J.
WRIGLEY, Jr., WILLIAM

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ALDIS, OWEN F.
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AMES, KNOWLTON L.
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ARMOUR, A. WATSON
ARMOUR, J. OGDEN
ARMOUR, LESTER
AVERY, SEWELL L.
AYER, EDWARD E.

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BANKS, ALEXANDER F.
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BARRETT, ROBERT L.
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BYLLESBY, H. M.

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CARPENTER, BENJ.
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CARRY, EDWARD F.
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DEERING, JAMES
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DRAKE, TRACY C.

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FARR, MISS SHIRLEY
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FARWELL, WALTER
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FERNALD, GUSTAVUS S.
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 FIELD, STANLEY
 FINLEY, WM. H.
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 FORGAN, JAMES B.
 FORSYTH, ROBERT
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GARTZ, A. F.
 GARY, JOHN W.
 GETZ, GEORGE F.
 GLESSNER, JOHN J.
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 GOODMAN, WILLIAM O.
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 GRISCOM, CLEMENT A.

HAMILL, ERNEST A.
 HARRIS, ALBERT W.
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 HASTINGS, SAMUEL M.
 HIBBARD, FRANK
 HILL, LOUIS W.
 HINDE, THOMAS W.
 HOPKINS, J. M.
 HOPKINS, L. J.
 HOROWITZ, L. J.
 HOYT, N. LANDON
 HUGHITT, MARVIN
 HULBURD, CHARLES H.
 HUTCHINSON, C. L.

INSULL, SAMUEL

JELKE, JOHN F.
 JELKE, JR., JOHN F.
 JOHNSON, MRS. ELIZABETH
 AYER
 JONES, ARTHUR B.
 JONES, THOMAS D.

KEEP, CHAUNCEY
 KELLER, THEODORE C.
 KELLEY, WILLIAM V.
 KING, CHARLES GARFIELD
 KING, FRANCIS

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 KIRK, WALTER RADCLIFFE
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 LYTTON, HENRY C.

MacVEAGH, FRANKLIN
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 MARK, CLAYTON
 MARKHAM, CHARLES H.
 MARSHALL, BENJAMIN H.
 MARTIN, WILLIAM P.
 MASON, WILLIAM S.
 McCORMICK, CYRUS H.
 McCORMICK, HAROLD F.
 McCORMICK, STANLEY
 McELWEE, ROBERT H.
 McINNERNEY, THOS. H.
 McKINLAY, JOHN
 McKINLOCK, GEORGE
 ALEXANDER
 McLAUGHLIN, FREDERIC
 McLAUGHLIN, GEO. D.
 McLENNAN, D. R.
 McNULTY, T. J.
 McWILLIAMS, LAFAYETTE
 MINER, W. H.
 MITCHELL, JOHN J.
 MOORE, EDWARD S.
 MORSE, JR., CHARLES H.
 MORTON, JOY
 MORTON, MARK
 MUNROE, CHARLES A.

NEWELL, A. B.
 NOEL, JOSEPH R.

ORR, ROBERT M.



MODEL OF A FOSSIL CYCAD FLOWER.

Two thirds actual size.

PALMER, HONORE
PALMER, POTTER
PAM, MAX
PATTEN, HENRY J.
PAYNE, JOHN BARTON
PAYSON, GEO. S.
PEABODY, AUGUSTUS S.
PICK, ALBERT
PIERCE, CHARLES I.
PIEZ, CHARLES
PIKE, CHARLES B.
PORTER, FRANK WINSLOW
PORTER, GEORGE F.
PORTER, GILBERT E.
PORTER, H. H.

RAWSON, FREDERICK H.
REVELL, ALEXANDER H.
REYNOLDS, GEORGE M.
ROBINSON, THEODORE W.
ROBSON, MISS ALICE
ROSENWALD, JULIUS
RUNNELLS, CLIVE
RUNNELLS, JOHN S.
RUSSELL, EDMUND A.
RUSSELL, EDWARD P.
RYERSON, MRS. CARRIE H.
RYERSON, EDWARD L.
RYERSON, MARTIN A.

SCHWEPPE, CHARLES H.
SCOTT, FRANK H.
SCOTT, GEORGE E.
SCOTT, HAROLD N.
SCOTT, JOHN W.
SHAFFER, JOHN C.
SHEDD, JOHN G.
SIMPSON, JAMES
SMITH, ALEXANDER
SMITH, SOLOMON A.
SOPER, JAMES P.
SPALDING, KEITH

SPOOR, JOHN A.
SPRAGUE, ALBERT A.
STEVENS, CHARLES A.
STEWART, ROBERT W.
STOREY, W. B.
STOUT, FRANK D.
STRAWN, SILAS H.
STUART, ROBERT
STURGES, GEORGE
SUNNY, B. E.
SWIFT, CHARLES H.
SWIFT, EDWARD F.
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SWIFT, HAROLD H.
SWIFT, LOUIS F.

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THORNE, ROBERT J.

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WILSON, WALTER H.
WINSTON, GARRARD B.
WINTER, WALLACE C.
WOOLLEY, CLARENCE M.
WRIGLEY, JR., WILLIAM
YATES, DAVID M.

DECEASED 1923

ADAMS, MILWARD
BEALE, WILLIAM G.
BOYNTON, C. T.

CARR, CLYDE M.
HOXIE, MRS. JOHN R.
HULBERT, E. D.

JONES, DAVID B.
MARSH, FRANK A.
McCORMICK, MRS.
NATHAN, ADOLPH

PEABODY, FRANCIS S.
PINKERTON, WILLIAM A.
REAM, MRS. CAROLINE P.
SMITH, ORSON

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ABRAMS, DUFF A.
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ARMBRUSTER, CHARLES A.
ASHER, LOUIS E.
ATWATER, WALTER HULL

BARNES, CECIL
BARTHOLOMAY, HENRY
BATTEY, PAUL L.
BECKER, BENJAMIN F.
BECKER, HERMAN T.
BEIL, CARL
BELL, LIONEL A.
BELL, ROBERT W.
BENDER, CHARLES J.
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DE VRIES, PETER
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FABRY, HERMAN
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FAY, MISS AGNES M.
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FENTRESS, CALVIN
FOREMAN, EDWIN G. JR.
FOSTER, VOLNEY
FREER, ARCHIBALD E.

GABRIEL, CHARLES
GALVIN, WILLIAM A.
GARDNER, PAUL E.
GARDNER, ROBERT A.
GATELY, RALPH M.
GATZERT, AUGUST
GILBERT, MISS CLARA
GILES, CARL C.
GRANGER ALFRED
GUNTHER, WALTER J.

HAMILL, ALFRED E.
HAMLIN, PAUL D.
HARDING, GEORGE F.
HARTWELL, FRED G.
HECHT, JR., FRANK A.
HELLER, ALBERT
HELLYER, WALTER
HELMER, FRANK A.
HERRICK, WALTER D. .
HERWIG, GEORGE
HERWIG, JR., WILLIAM D.
HOLLIS, WILLIAM D.
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K.
WENDELL, JR., BARRETT
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H.
WORK, ROBERT

YONDORF, MILTON S.

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HUNTER, SAMUEL M.

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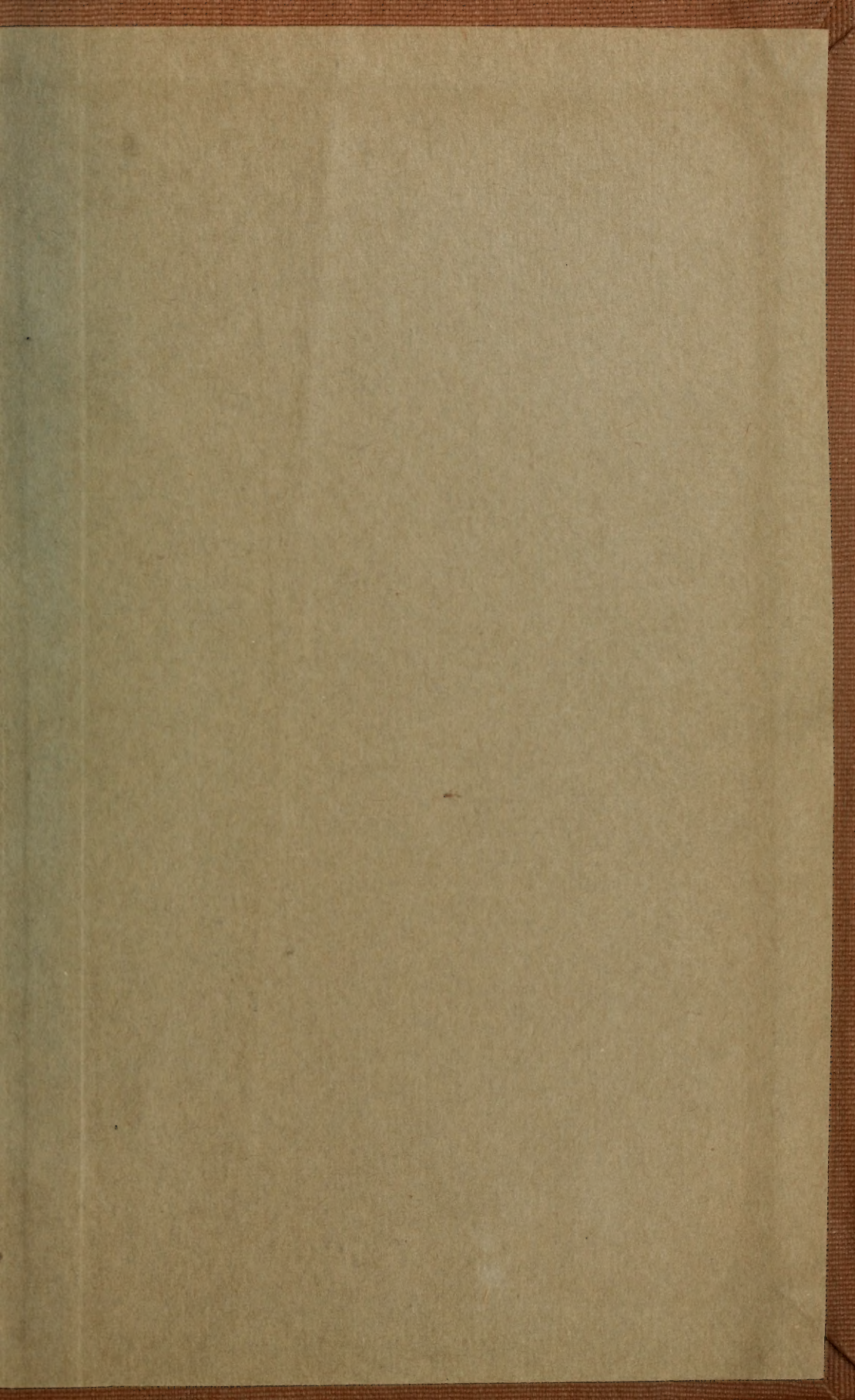
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